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Healthy Habitat - Healthy Wildlife
(Corbett National Park)

Photo by - Narendra Singh

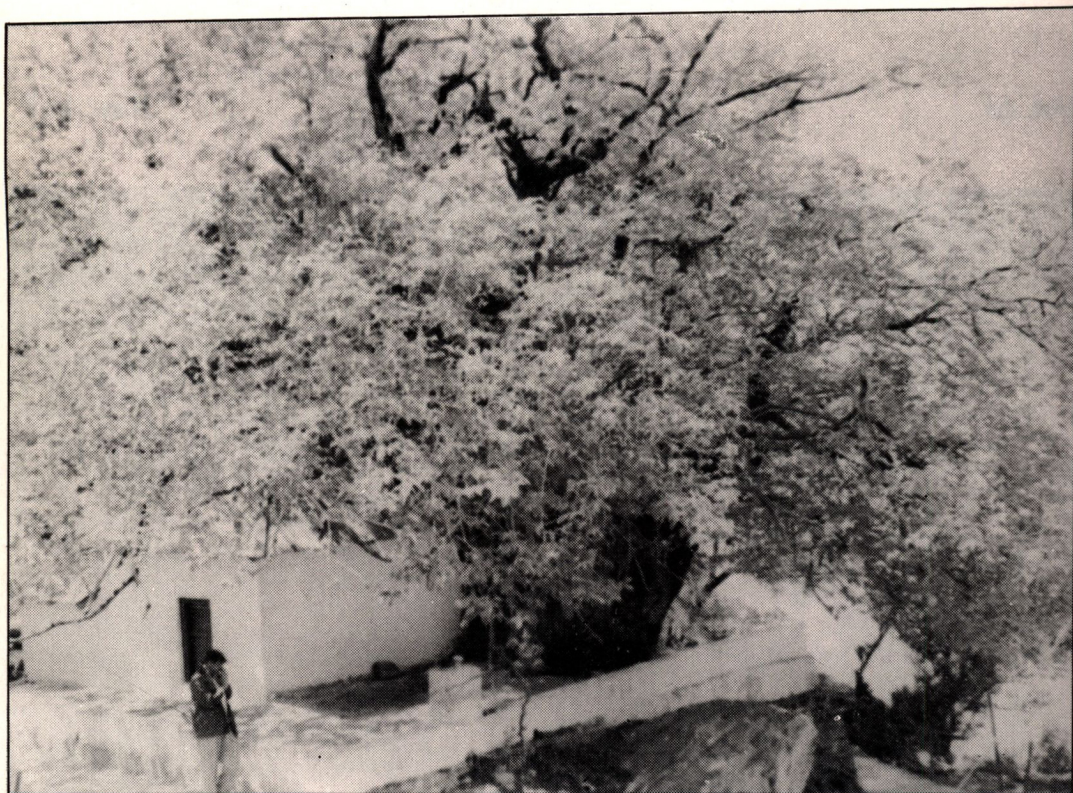


Photo - Courtesy Garhwal Mandal Vikas Nigam, Dehra Dun

Millennium Tree

The photograph on the opposite page is that of hill mulberry (*Morus serrata*) tree, reported to be more than thousand years old. It is at Joshimath in Chamoli district of newly created state of Uttaranchal. Joshimath also known as Jyotirmath is a seat of learning, presided over by one of the 'Sankaracharyas'. Joshimath is also winter seat of Sri Badrinathji, the most sacred amongst the four *dhams* in India. Joshimath hosts a number of temples, mostly dedicated to lord Vishnu. There is a small temple underneath the trunk of this hill mulberry tree. In fact with the passage of time the trunk of this tree became hollow at ground level and some devotees built a small temple inside the hollow trunk.

This tree has a huge periphery, measuring about 25 feet. Though the height of the tree is not much, but its foliage is green, indicating that the tree is healthy and is in the process of growing.

I have been to Joshimath in 1951 and many a times thereafter. But I could notice this tree only in 1982, when along with my family I made a point to visit every temple, big or small, at Joshimath. Before I could inquire about the age of this tree, the *Pujari* prompted that the tree was 5000 years old and is standing there since *Vedic* era. I took the statement of *Pujari* with a pinch of salt but after making a close observation of the tree, I reckoned its age around 1000 years. This was corroborated by Door Darshan a year or two later, when they announced that the oldest living tree in India was this tree at Joshimath.

In India people plant trees at temple sites and dedicate them to the deity of the temple. These trees attain enormous size, chiefly due to the protection afforded to them at temple site.

Tree is not merely a mass of wood nor a heap of biomass. It is an embodiment of growth and a marvel of nature. Each living tree becomes an inspiration to any one who will let it grow. Each tree is a monument to the tenacity of life. Who would not be amazed to behold a towering deodar or fir tree, growing in mountaneous country under extremely harsh climatic conditions where the growing season barely spans five to six months in a year. It is indeed great pleasure to see a gigantic tree. Even in hard economic terms, the tourist potential of veteran trees is considerable.

- I. S. Negi

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Whither Conservation in India ?

By

I.S. Negi, I.F.S. (Retd.)

EMPEROR ASHOKA, aptly described as the greatest and noblest king of India, was the first ruler to enact conservation measures in the third century B.C. His benevolence extended to all living beings. He established hospitals and reserves (*abhyaranya*) for wild animals and birds. Some of his decrees were inscribed on stones and have existed till today. However, much before Ashoka preached reverence to living beings, conservation has been an essential part of Indian psyche and tradition. The conservation ethic has found a natural home in India from the Vedic era. It has been nurtured here and has formed expression at different times in the social, religious, cultural and artistic ways of the Indian people. All major religions – Hinduism, Buddhism and Jainism have enshrined this philosophy of life. The Indian tradition teaches that all forms of life, human, animal and plant are so closely linked that disturbance in one gives rise to imbalance in the other.

Nature has endowed India with such abundant flora and fauna that it compares favourably with that of any other region of the world. It is estimated that about five percent of all known plant and animal species on earth are found in India. That approximately makes 45000 species of plants and 65000 species of animals. This includes about 13000 species of flowering plants, 20000 species of insects, 4000 species of molluscs, 6500 species of other invertebrates, 2000 species of fish, 140 species of amphibians, 420 species of reptiles, 1200 species of birds and 340 species of mammals.

The main reason of this remarkably rich diversity of life forms in a single country is its vastness, variability in topography, variety of climate, diversity of ecosystems which it has supported down the ages. Almost all major types of habitats are found here, from areas of heavy rainfall in the north-east to desert of Rajasthan, from the coldest (Ladakh and Lahul-Spiti) to the hottest climatic conditions (Central India), from the highest elevations in Himalayas down to the sea level. It is the sum total of the rich diversity which has made India a 'gene bank' for a number of food crops, forest trees, medicinal and aromatic plants and domesticated animals. It must be recognised that India

now is unquestionably one of the richest countries in the world floristically and faunistically.

But the archaic state of pristine greenness (*shasya shyamala*) could not be preserved eternally. At the dawn of civilization forests were cut and burnt for agriculture and colonization. The vast tracts of land which were covered with forests gradually turned into deserts. This situation further compounded with the increase in population and industrialization. The process of deforestation is still going on unabated. The expanding rate of land degradation and desertification is now estimated to involve 25% of the world land area and adversely affect 900 million people or one-sixth of the world population. This is universal phenomenon but the situation is grimmer in India where the forest cover has been reduced to bare 19% of the total geographical area of the country. Forest cover acts as an umbrella for the crest of the earth. Once the forest cover is removed a chain reaction takes place, leading to soil erosion in the hills, sedimentation of dams and water reservoirs, deterioration of environment, impoverishment of the natural resources and ultimately the catastrophe for humans and wildlife. This situation warrants a comprehensive approach for conservation of nature and natural resources.

The first scientific conservation of forests was started by the colonial power in British India in 1861, when a regular forest department was constituted and the Forest Research Institute was set up at Dehra Dun. The sole purpose of bringing the existing forests under scientific management was to judicially exploit them in perpetuity for the benefit of mankind.

We all know that trees put annual growth. The cardinal principle of forest management is that keeping the capital intact we are entitled to cut the volume of wood equal to the annual growth put by a given forest. In simple terms if a 100 unit forest puts in 10 units of annual growth, then only 10 units of wood will be removed as annual yield. Working plans were prepared and forests were exploited accordingly. This system worked uninterruptedly for some time, till the biotic factors did not seriously interfere with the system. But within just half a century forest management cracked up and ultimately failed. It may be reckoned that trees put annual growth under normal conditions. If there is a drought, fire or disease in a particular year, trees do not put normal growth in that year or part of the year. And if we go on exploiting the forests

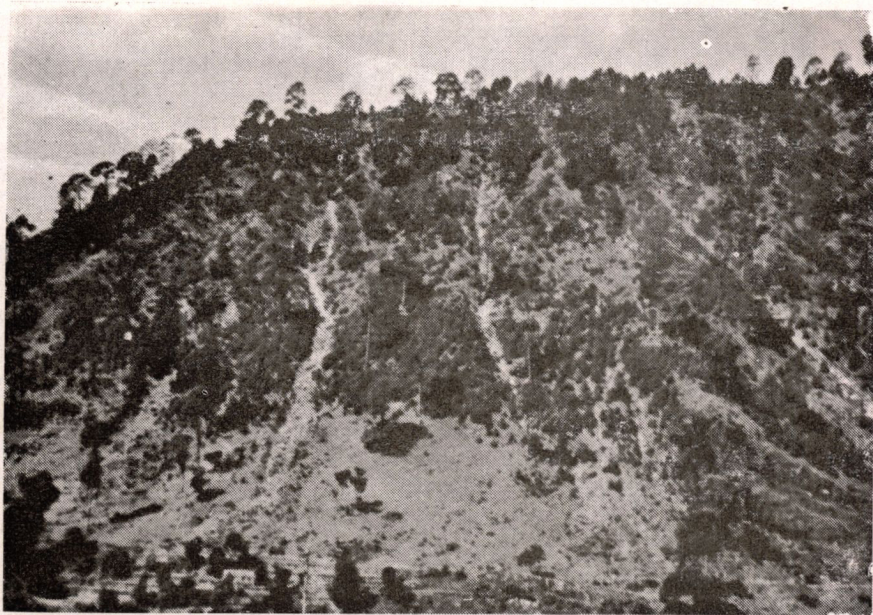


A dense forest cover protects the soil as cocoon protects the insect larva.



Even a well stocked monoculture crop like chir (*Pinus logifolia*) protects the soil efficiently.

Photo by—I.S. Negi



Soil erosion starts as soon as the forest cover is removed.



Evil practice of shifting cultivation.

Photo by—I.S. Negi

on the assumption that we are removing trees equivalent to the annual growth without taking the adverse factors into account, then the whole system is bound to fail, which exactly happened. We have been cutting the forest to the extent of prescribed yield without making allowance for illicit fellings, war fellings and natural calamities such as fires, drought, windfall and disease, with the result that we have over exploited the forests in the past.

Fortunately we woke up, albeit belatedly and have put moratorium on green fellings in sensitive areas while in others the thrust is on conservation rather than exploitation. Prior to Independence mere physical protection was afforded to the forests in the name of conservation and precious little was done to enrich the qualitative composition of forests. Natural regeneration was resorted to and forests were generally left at the mercy of nature. But nature drastically changed due to population explosion, industrialization and global warming. The natural regeneration which was achieved earlier as a matter of course failed in many areas leaving them blank. There are so many adverse factors which inhibit the nature from recouping the forests and left to nature these forests will fast deplete and degrade to barrenness. If we really want to conserve our forests we need to tend the natural forests and supplement them with extensive plantation work wherever required.

After Independence the biggest blow inflicted to forest conservation was that the forest land was liberally set free for developmental works such as river valley projects, canals, roads, hydro-electric projects, transmission lines, colonization, horticulture and agricultural purposes. All these developmental projects ate into forest land. It was only in 1980 that the Forest Conservation Act of 1980 put some restrictions on the liberal release of forest land. But by then considerable damage had already been done. At times this act was subjected to pulls and pressures and was not implemented in true letter and spirit.

As a sequel to 'grow more trees' campaign regular plantations were started from nineteen fifties and sixties, when degraded forests and grasslands were planted with fast growing species and trees of industrial importance. Mostly eucalyptus, khair, shisham, ailanthus etc. were planted, which species do not possess soil and water conservation qualities, nor do they contribute towards creation of suitable wildlife habitat. Similarly in 1970^s an ambitious programme of afforestation was launched in the name of social

forestry (in plains) and rehabilitation of civil and soyam forests (in the hills). These areas were in near vicinity of villages and were subjected to heavy pressure for collection of fuel and fodder by the villagers. The idea behind the afforestation of these areas was to make local people self-reliant in matter of their daily requirements of timber, fuel and fodder and set free the reserved forests from these burdens.

As a great leap forward the social forestry programme and afforestation of civil and soyam land was taken up on massive scale. Plantation work was done in a haphazard manner. In a bid to show quick results lofty targets of plantation were fixed, without prior building the requisite infrastructure. For a successful afforestation work proper net work of nurseries is required, which provides suitable planting stock after two to three years. Mostly one year old seedlings or unhealthy planting stock was used, which resulted in failure or only partial success was met with. Selection of proper tree species was not done and just to achieve the targets wrong species were planted at wrong places. Provision for maintenance and protection of these plantations was made for initial three to four years and after that they were left at the mercy of the villagers. The term 'social forestry' was a misnomer. By social forestry the villagers presumed that it was their *bonafide* right to use its products as and when they needed, without allowing the crop to attain exploitable size. Thus barring few cases, the social forestry programme and afforestation of civil and village land doomed to failure.

Although forestry is a long term proposition and trees take many many years to show up the results, yet we cannot boast of making India greener in these past fifty years. The conservation efforts made thus far have been hamstrung due to faulty planning and implementation thereof.

Whether or not social forestry programme and afforestation of civil and panchayati land was a success is a debatable question, but it definitely put the management of reserved forests to back burner. The main thrust was on social forestry and afforestation of civil and gaon samaj land and pitifully forest operations were suspended on one plea or the other. Forest officials, therefore, turned Nelson's Eye towards the reserved forests. Sivicultural operations and other conservancy works were badly neglected on the pretext of non-availability of funds. In the hills owing to the ban on felling of green trees above 1000 metres, thinnings in congested young crop and removal of

mother trees standing over established regeneration were not carried out. This quandary did not only put the forest management in topsy turvy but also caused a severe loss of revenue to the state exchequer. Ban on felling trees should not be imposed according to the altitude but should be applied to the selected areas which are prone to soil erosion and land slides irrespective of height.

Studies conducted in the United States of America in connection with conservation of forest and game preserves revealed that 'forests are not best conserved by prohibiting all cuttings. And it is further known that long undisturbed forests are not as effective places for water conservation as they were earlier thought to be. In fact there is considerable evidence that a properly managed forest affords better watershed protection than one that is left alone'. The Central Soil and Water Conservation Directorate after carrying out extensive trials at Selakui (Dehra Dun) found that the run off is more in a well stocked pure sal forest than in a mixed deciduous forest. Raising and managing a mixed forest is, therefore best conservation bet.

The worst neglected aspect of forest management was fire conservancy. Controlled burning in young regeneration and clearing and burning of fire lines were not done due to paucity of funds, with the result that accidental forest fires became regular feature. Some of the forest fires were so fierce and wide-spread that they wiped out entire forest crop, rendering vast areas blank. Some small gaps naturally occurred due to dying of old trees. These blanks did not normally regenerate due to biotic pressure and changed climatic and edaphic conditions. No efforts were made to plant up these blanks with suitable tree species and were left to nature, with the result that either they turned permanent blanks or got invaded by lantana or other weeds. Things should not have been allowed to drift. The old saying that 'tree grows by itself' no more holds good now and regeneration fellings, thinnings, improvement fellings and subsidiary silvicultural operations are necessary for proper growth and sustenance of forests. The new practices and techniques of forestry, such as social forestry, rehabilitation of civil and panchayati forests and Joint Forest Management are welcome propositions but the traditional forestry should not be bidden good bye. The management of natural forests should not be neglected at any cost. Natural regeneration of forests should be resorted to wherever possible as plantations are no substitute for natural forests. Though it is impossible to bring back the pristine

glory of natural forests, yet given due attention a brake can certainly be put to their deteriorating condition.

The highest priority should be given to restoration of forest cover over 33% of the geographical area of the country from the present level of 19%. At the same time efforts should be intensified to increase the density of degraded forests, though these areas are normally shown as forest but actually they are blank. To fulfil the above objectives a holistic approach to forest conservation is required as briefly indicated below :

1. Protect the existing forests :- The existing forests should be rigidly protected from timber mafia, illicit fellings, thefts, fires etc. The natural forests will act as gene bank for preserving biodiversity. They will seed the surrounding areas and will ensure natural regeneration.

2. Rehabilitate degraded civil and panchayati forests :- The civil and panchayati forests should be planted with suitable tree species which yield timber, fuel, fodder and fibre for meeting the requirement of villagers on sustainable basis. Every village should have its own forest so that they do not depend on reserved forests for their daily needs. The reserved forests will thus be set free from the burden of rights, concessions and privileges hitherto enjoyed by the villagers in the reserved forests. Once the civil and village forests are fully developed, so as to adequately meet the requirements of villagers, they should be asked to shun the reserved forests and treat them as *sanctum sanctorum*. The reserved forests should be managed for soil and water conservation. They should also be judiciously exploited wherever permissible. Civil and village forests should also make up the deficit of 14% of the desired 33% forest cover of the total geographical area of the country.

3. Soil and water conservation: - Denudation of forests has led to the problem of soil erosion. Naked land does not effect the rain water to go deep into the sub-soil and most of it flows down as run-off. Forest cover breaks the force of rain drops and the humus and leaf litter checks the run off and forces the rain water to percolate deep to lower strata of soil. But till such time a full fledged forest cover is restored the forces of nature will continue to erode the soil and cause run off and floods. In order to circumvent these forces it is necessary to carry out certain soil conservation works such as making contour bunds, trenches in sloppy ground, gully plugging, construction of

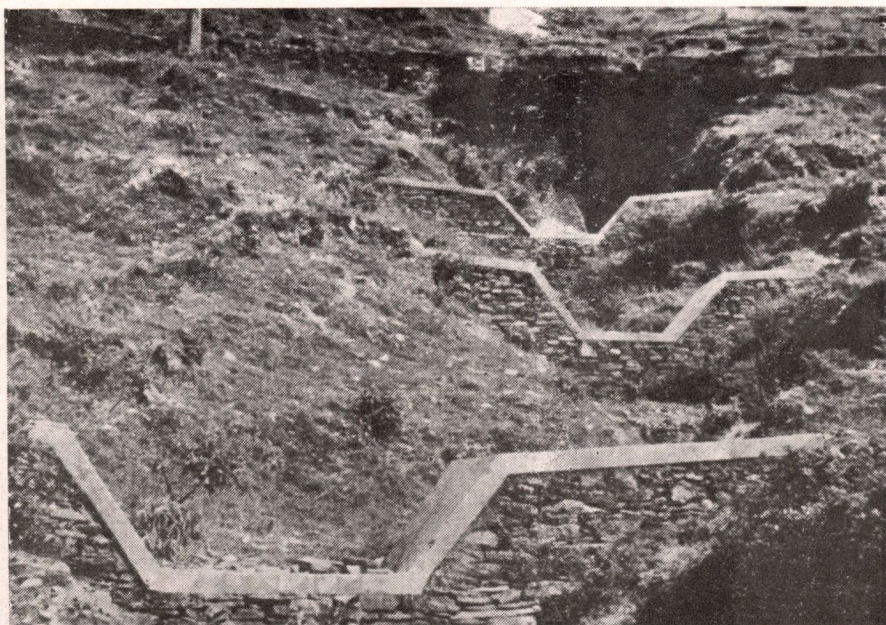


A failed Chir regeneration area

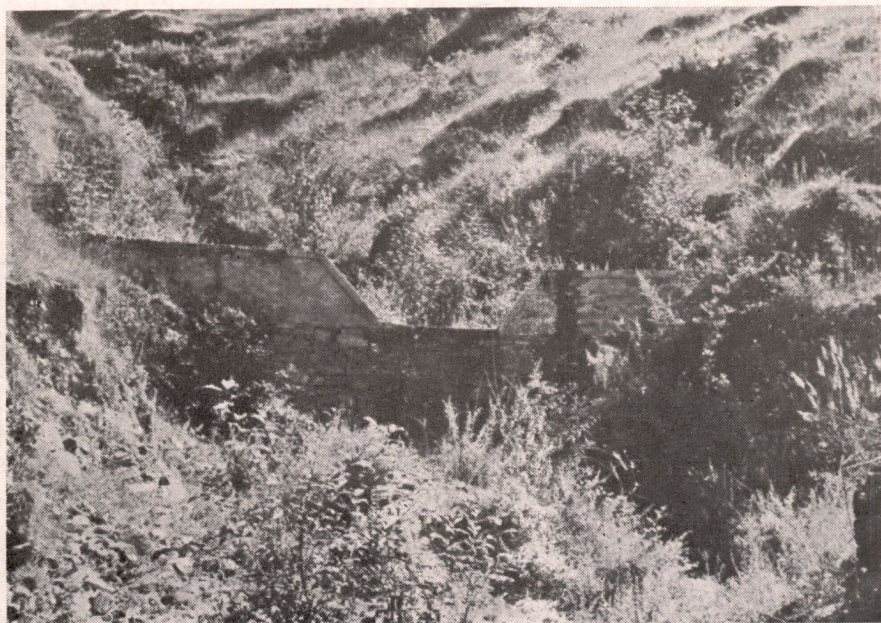


A successful interplanting in degraded oak forest.

Photo by—I.S. Negi



A series of check dams constructed over an eroded nullah.



Check dams helped in successfully stabilizing the eroded nullah.

Photo by —I.S. Negi

check dams etc. These soil conservation measures will help the nature in clothing the denuded areas within stipulated time. In addition to this small water tanks should be made on slopy ground in hills and bigger tanks and ponds in plains to store the run off water for use in dry period. These water harvesting techniques not only collect the rain water but help in augmenting the ground water. It may be reckoned that ground water is the biggest reservoir which should be replenished at all costs. Twenty-first century is likely to face water crisis and water management will be the main problem to tackle. We should better learn to conserve water.

4. Help reduce global warming:- Global warming has been instrumental in change of climatic conditions, which led to erratic rainfall. These uncertain climatic conditions had an adverse effect on the growth and development of forests. Forest fires, shifting cultivation, clearing of forests and industrial emission are responsible for global warming. Efforts should, therefore, be made to stop them altogether or otherwise, minimise them. Concerted efforts should also be put in to maintain equilibrium in nature by protecting the environment and making sustainable use of natural resources. It must be understood that the real issue is not protecting the environment *per se* but how to manage the environmental resources to the best effect of sustainable social, economic and physical development. Forests are the single largest environmental resources. So, conserve them.

WILDLIFE CONSERVATION: The story of wildlife conservation is no different. It is now universally recognized that the main reason for destruction of wildlife is loss of habitat. Habitat for most of the wildlife is forest, where they live, reproduce and flourish. If the forests are improved, the wildlife will automatically improve. Therefore, the emphasis should be on the development of forests with regard to density and vegetative composition, so as to make it conducive to healthy growth and development of wildlife. Though diversified efforts are being made to reclaim the wildlife but precious little is being done to improve the habitat. In the present day scenario of research and development wild animals are being bred in captivity and are then released in the forest. When these spoon-fed babies are released in the forest, they find their new home an alien land where chances of their survival are remote. Moreover, zoo bred wild animals, especially felines (big cats) lose animal instinct. Captive breeding and scientific research help species survival, but extinction is only prevented when species are viably maintained in their

natural habitat. Habitat conservation is the key to the survival of wildlife, whereas captive breeding is a temporary expedient. Conservation of Wildlife implies conservation of ecological communities of which it forms part and of the natural habitats to which it is adapted. Conservation of Wildlife implies conservation of ecological communities of which it forms part and of the natural habitats to which it is adapted. For successful preservation of wildlife it is important to preserve the habitat, i.e., forests, grasslands and wetland where wildlife thrives and propagates. The aim should, therefore, be to preserve wildlife under natural conditions.

For proper conservation of wildlife more and more forest areas should be declared as protected areas. The protected areas have more legal sanctity and there is less human interference in such areas. Human beings are a most disturbing influence on wild animals and intrusions by persons who are permitted to collect forest produce is minimised in protected areas. The present laws related to forest conservation and wildlife protection should be made more stringent. The success of conservation policies will rest primarily on whether or not the law is strictly enforced. There should be no compounding of serious offences, like poaching, killing of wild animals and burning of forests. For successful conservation of wildlife the following strategies need to be pursued:

1. Protection: Protect the existing wildlife from physical destruction.
2. Preservation: Preserve the race (wildlife), create such conditions so as to make wildlife survive, breed, multiply, perpetuate and does not get extinct.
3. Conservation: Create such an environment and induce such ecological conditions wherein the wildlife may live perpetually in peace and harmony with nature.

Let us put our heads and hands together and regain healthy habitat and healthy wildlife. Amen.



The New System of Forest and Protected Area Management in Madhya Pradesh (India) with Communities' Participation

(A few success stories with feedback from a Workshop in Rewa Circle)

By

R.B.S Kushwah¹, H.C. Gupa², A.K. Kolte³ and D.B. Singh⁴

Executive summary

The JFM (Joint Forest Management)— the management of forests with the active involvement of local people, is now a days a very popular system of management for the forest resources. Its co-brother JPAM (Joint Protected Area Management) (Kushwah, 1996) is also coming up in India for the management of PAs in the country. The GOI issued the guidelines for JFM in June 1990 according to which some State governments made their own rules. Madhya Pradesh too by its Gazette notification (in the year 1991) started the JFM chapter in the State with the provision of formulating of two types of JFM communities— FPC (Forest Protection Committee) and VFC (Village Forest Committee). The first one has to be constituted in good forest area with forest density of more than 40% and the second one has to be formed in the degraded forests with the forest density less than 40%. The above directions of the GOMP were revised from time to time so as to achieve the desired goal with minimum difficulties. These developments paved the way for the JFM in the State of Madhya Pradesh.

The JFM/JPAM is taking shape in the good atmosphere of its great potential and a few success stories. A number of workshops/ seminars on JFM/JPAM are being organised in Madhya Pradesh in order to facilitate, keeping 'in touch' the staff (the managers) and the people (the custodians) of natural resources with the latest laws, policies and other developments in the field of JFM/JPAM. One such workshop was organised in Rewa Circle of Madhya Pradesh from 26th to 27th March 1999. The 07 Divisional Forest

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4. Superintendant, Son Ghariyal wildlife sanctuary, Sidhi Madhya Pradesh (India).

Officers, 16 Sub-Divisional Forest Officers, 16 Range Forest Officers, 22 Deputy Rangers and Foresters, 29 Forest Guards, and as many as 100 plus executives from local VFCs/FPCs (including Presidents/Vice-presidents/Secretaries) participated in this workshop. The main components of the workshop were group discussions on the relevant issues, field demonstrations, presentations and the feedback from the participants.

It has been concluded that the future of JFM/JPAM is bright in Madhya Pradesh. The GOMP has taken many policy decisions to enhance JFM and moreover to overcome the constraints in the way of community-based conservation of natural resources. The various issues are needed to be given more careful attention such as

- *The constraints* like socio-political, economical, ecological, lack of institutional support, and absence of legal framework, etc. need to be solved with proper care.
- *The laws and policies* regarding JFM have to be tackled by identification of stakeholders, flexibility, equity economic considerations, feed back from fields, etc.
- *The matter of rights and concessions of the local people* has also to be considered properly, although few steps have already been taken by GOMP in this direction.
- *The Capacity-building programmes* have to be taken up towards increasing knowledge of partners of JFM/JPAM.
- *The institutional structure* has to be enhanced for ensuring the overall development of the area while taking into consideration of the social needs of the communities.
- *The outsiders' role* has to be clearly classified and defined as the worldwide NGOs and other outsider agencies/individuals have played and are playing their important roles in JFM/JPAM.

The future strategies regarding JFM/JPAM in Madhya Pradesh must include :

- The *forest land zonation concept*, viz, Zone-1 (PAs), Zone-2 (Closed forest outside the PAs), Zone-3 (Open forests) and Zone-4 (Private and community lands) should be distinctly demarcated.
- *The separate objectives and strategies for each zone, viz., conservation approaches, improving the knowledge base, human and institutional capacity and Global and national co-ordination for Zone -1 areas. The maintenance of forest cover, enrichment of growing stock, and timber and NTFPs production for Zone-2 areas. The increase in forest cover and rehabilitation of degraded areas, production of forest produce for the bonafide needs of the communities for Zone-3 areas. The increase in tree cover-own areas outside forests, promotion of tree farming by farmers on a large scale for Zone-4 areas. And*
- *Ensuring women's participation*, viz, by defining clearly the role of women, determining the explicitly and facilities for women, developing, monitoring and support-system to review gender specific issues at regular intervals, creating awareness, strengthening women's position and training to women members.

The great enhancement in the publicity and extension services for JFM/JPAM are call of the day at least in Madhya Pradesh, as was the unanimous opinion of almost all the participants of the workshop. Despite the increase in the responsibilities of all the participants (the local people and the staff) by adopting the new management system for natural resources, they must be mentally prepared for the change involving local communities actively in JFM/JPAM. Moreover, the support and guidance from all the management levels and outside too is required for its success. The changes in people's attitude and approaches at local level may be encouraging, but clear need for parallel changes in government attitudes, structures and process is vital. The GOMP has taken up few constructive steps for the right supportive approaches in this field but still more areas are to be covered to enhance JFM/JPAM in the State.

Introduction– background of people's participation in managing natural resources in Indian sub-continent especially in Madhya Pradesh :

Linking people or communities (the resource users) with forests of PAs so that they participate actively in the management and planning processes adopting the integrated approach is called the Joint Forest mangement (JFM) or Joint PAs Management if applied in the Protected Areas (PAs) (Kushwah 1996). The Participatory approaches to conservation and resource management are increasingly being adopted world-wide which ranges from minor to sophisticated 'community-owned' processes (Williams et al. 1998). The transformation of rural development approaches recently, provided a new opportunity for policy-makers and some conservation agencies to re-address the 'conservation versus development' issues (IUCN 1980); Mc Neely & Miller 1984; Brundtland 1987; Kiss 1990; IUCN 1992; Willium et al. 1998). A slow but definite shift is taking place towards decentralized, site-specific, communities-based conservation activities (Kothari et al. 1998).

The communities participation in management of the natural resources may be a new concept for other countries, but in India traditional linkages between people with forests and PAs (ancient name of PAs in India is *abhayaranyas* meaning wildlife sanctuaries) exist from time immemorial. Ancient *Ashrams* of the *Rishies* were the 'home' of the wild animals and some important plants were also cultivated there for the *Aurvedic* medicinal purposes. Our culture and myths, based on the principles of the *Ahimsa* *Paramo Dharma* and *Sarvo Bhavantu Sukhinah* [i.e., non-violence is our absolute duty (*Param Dharma*) and let all should be happy], echo the conservation and preservation of nature and its resources. In order to enlisting the people's support in the conservation movement our ancestors linked the forests, plant/trees and wild animals with day-to-day life and so the worshipping of the trees and animals started in India during the *vedic*-period. So the 'holy-plants' viz., *Pipal* (*Ficus religiosa*), *Bargad* (*Ficus benghalensis*), *Aam* (*Mangifera indica*), *Tulsi* (*Ocimum sanctum*), etc. and the 'worshipped animals' like *Peacock*, *tiger*, *lion*, *elephant*, etc. became the part and parcel of the life and the cultural heritage of the Indian society. Even in this modern era of science and technology, no important work/ceremony can be perfrmed in a '*Hindu*' family without the worship of the 'First-worshipped-God': the elephant-headed GANESHA. Goddess *Durga* rides on the tiger and the God *Vishnu* resides in a palace (called *Chheer Sagar* or

Baikuntha) which rests on the thousand heads of the *Sheshnag* (python) and rides on the back of *Garuda* (the holy bird). Monkey-ape, the God– *Hanuman*, son of the God *Varun* is worshipped almost at every place in India. The cow is our *mata* (mother) like the earth and sky is the father and so, it becomes the duty of every Indian to protect the earth and its resources like our parents. In India sacred groves and sacred ponds are preserved even today by communities who otherwise live in a barren landscape. Such examples illustrate the need to devise indigenous models of conservation that are based on people's daily relationship and use of natural resources. People protect natural resources when they feel a sense of ownership, and when they have value for them. Once people place a value on natural resources, they will protect them and use them wisely. Participatory management of such resources is the only way to ensure their protection.

For more than a century, Indian forest management policies emphasized on state custody of forest resources, the development of plantations, and timber production from natural forests. These policies often failed to meet the needs of local communities and were biologically unsustainable. In past 20 years, however, state forestry authorities and local communities have collaborated on the development of Joint Forest Management (JFM) projects to meet their demands on forest resources. Before the advent of JFM policies in India, extensive areas of natural forest were converted into plantations. Forest areas were deforested to the tune of 1.5 million hectares per year (GBA 1995). Despite provisions in the 1980, Forest Conservation Act (FCA) that restricted the felling of natural forests and emphasized the potential of non-timber forest products (NTFP), high deforestation rates continued. In addition to being targets for the growing demand for commercial wood products, the forests were also under growing pressure from the 56 million people dwelling in or around the natural forests for meeting their daily requirements. The custodial practices of forest preservation exercised by the state were no longer effective in controlling such demands. In West Bengal, foresters realized that the future of sal (*Shorea robusta*) coppice forests—once a major economic resource— was linked to local community participation in forest management and benefit sharing. Local communities were persuaded by the state to become partners in protecting natural forest land and aiding natural regeneration, for which they would receive harvesting rights to fuel wood and NTFP (e.g. fruits, nuts, medicinal plants) and a 25% share of timber sale profits (SPWD 1992). The response was slow at first, but by the late 1980s, many communities throughout West Bengal were involved in JFM

projects. Communities are now actively protecting and managing forest lands, deforestation rates declined and conditions for wildlife and biodiversity are improving. Convinced by the success of JFM projects in West Bengal and elsewhere, Government of India issued guidelines in 1990 to encourage all states to adopt JFM Procedures. In a major shift from the early history of forest management, the Indian MOEF sent out a circular on 1st June 1990, supporting the involvement of village communities and NGOs in the regeneration, management and protection of degraded forests.

India's forestry sector over the last decades has begun shifting its strategies to emphasize the improvement of communication as protection of natural forests in order to facilitate their regeneration and recapture their productivity. Under the Indian Joint Forest Management (JFM) concept, local communities become partners in protecting and managing state-owned forest resource, thus legitimising a role in the control of resource that they have often held for generations. Successful experiments were undertaken by forest departments of West Bengal, Gujarat and Haryana states from as early as 1977, and in many other states afterwards. In these cases, village forest protection communities (FPCS) or hill resource management societies (HRMS) in Haryana were given responsibilities of protecting degraded forest land from illegal cutting fires, overgrazing and encroachments. In return they were granted certain concessions and in one case were granted 25% of the new return of the timber harvest (Campbell 1992). Government departments provide technical support in areas such as social mapping, and to help legitimise the outcome (Poffenberger and Macgean 1994). Forest departments are confronted with major transitional problems as the move from traditional custodial and timber management roles to support roles in JFM activities. Protection duties are transferred to the communities. Production activities shift from timber to multiple products, managed by villagers. Field staff need to develop a different mix of technical skills and technical expertise to serve as community organizers, forestry extension agents, and market analysts (Poffenberger and Macgean 1994). The Indian sub-continent experiences in JFM reveal that elaborate policies and heavily funded projects are not necessarily sufficient to accelerate the empowerment of community groups as managers of public forests (GBA 1995).

Significantly, more critical is the emergence of a political environment supporting and facilitating the establishment and replication of decentralized management systems. Ultimately, simple transparent policies need to be

developed as broad guidelines that provide flexibility and encouragement to local administrators and communities to fine-tune their own resource management agreements (Poffenberger and Mcgean 1994). This change in policy ought to be viewed as an opportunity of empowering people, although no order or policy by itself will be sufficient to enable people to control. As per the recent reports from UNEP (GBA, 1995), throughout much of the South and SE Asia, communities have relied historically on their own rules and regulations to control forest use and ensuring equitable distribution of forest lands and products for agriculture, hunting and gathering. Communities-based conservation is generally possible in situation where members are able to carry out basic functions themselves, including the establishment of use regulations, the resolution of disputes and the equitable distribution of benefits. In many parts of India and some Asian countries, the indigenous communities, institutions and leaders have been displaced by formal, after politicized government institutions now emerging to indicate the local community institutions need to be acknowledged and given the authority to take on responsibilities for forest protection. In some cases, small informal groups of tribals are taking action unilaterally by protecting forests against all outside users. Other groups are receiving support and encouragement from government forest agencies (Poffenberger & Mcgean 1994; Millar et al. 1995).

What are JFM and JPAM ?

People situated in or near biologically diverse ecosystems often gain little economic benefit from conservation or sustainable resource use. In contrast, the costs incurred as a result of conservation measures—especially the establishment of PAs tend to be felt most severely at local levels (Wells 1992). Measures designed to promote sustainable use or protection of biodiversity must, therefore, provide economic incentives to increase the net local benefits from sustainable resource use and protection (McNeely 1988). Furthermore, it is increasingly recognized as neither politically feasible nor ethically justifiable to attempt to decoy poor people the use of natural resources without providing them some alternative means of livelihood (Wells et al. 1992).

JFM imbeds democratic procedures for scientific management of forests in which local people have a direct and important role in determining the fate of forests existing around them, and sharing benefits of their efforts. People's participation and empowerment has led to decentralized planning and

development of villages as well as forest produce under JFM. Excellent results in certain places have proved the tremendous potential of the JFM approach.

In JPAM the people's participation is restricted to some extent in accordance with the existing law, Acts, etc. but the main theme of 'care and share' approach is the same for JPAM as its co-brother JFM. The people residing 'around' the PA are involved in the PA management activities by preparing and implementing the appropriate 'eco-development plan' for the PA and micro-plans for the individual villages. Enlisting the co-operation and support of local people has thus emerged as a major priority for the management of protected areas. An increasing number of projects have been launched in developing countries with the goal of linking PA management with improvement in human welfare (McNeely 1988; Kist 1990; Stone 1991; West and Brechin 1991; Western *et al.* 1994). In Madhya Pradesh also under the World Bank Forestry Project, many JPAM (Eco-development) have been started involving people in the PA management process. JPAM committees (Eco development communities) have been formed in 105 villages and micro-plans have been prepared for 50 villages in and around the PAs (MPFD, 1997). The considerable variability in the implementation of the JPAM programme in the field requires the need for focusing special attention.

The difference of approach ?

In many parts of the world, traditional forms of forest management have been replaced by timber-oriented commodity production forestry. Often this transformation has depleted forest species and left local communities with fewer resources to supply food, clothing, shelter and basic subsistence needs. So the new approaches of CFM or JFM has been developed. The JFM and JPAM represents a 'fundamental shift' in the approach of forest and PA planning and management so conceptually envisages a movement. *Table-1* represents the shift of this approach.

Topology of participation

Box-1 illustrates seven different types of participation (such as participation in information giving, consultation, functional participation, etc.) with the components of each type in JFM/JPAM in order to facilitate the clear understanding of its meaning.

Box-1 A typology of participation

<i>Typology</i>	<i>Components of Each Type</i>
<i>Passive participation</i>	People participate by being told what is going to happen or has already happened; the interaction is unilateral. The information being shared belongs only to external professionals.
<i>Participation in information-giving</i>	People provide information but do not have the opportunity to cross-check what researchers are recording or writing, much less influence proceedings.
<i>Participation by consultation</i>	People participate by being consulted by external agents, who define both problems and solutions. Decision-making is not shared, and professionals are under no obligation to take on board people's views.
<i>Participation for material incentives</i>	People participate by providing resources, for example, labour, in return for food, cash or other material incentives. Much in situ research and bio-prospecting falls in this category. People have no stake in prolonging activities when the incentives end.
<i>Functional participation</i>	People participate by forming groups to meet predetermined objectives related to the project. Such involvement tends to be only after major decisions have been made.
<i>Intereactive participation</i>	People participate in joint analysis, which leads to action plans and the formation of new local groups or the strengthening of existing ones. These groups take control over local decisions, and so people have a stake in maintaining structures or practices.
<i>Self-mobilization</i>	People participate by taking initiatives independent of external institutions.

[Source: Modified from Pretty 1994 as quoted in Pimber, M & Pretty, J. 1998. *Diversity and sustainability in community-based conservation*. In: Communities and conservation (eds. Kothari *et al.*), Sage Publishers, New Delhi; p:65]

Joint Forest Management in Madhya Pradesh

Box-2 illustrates the administrative, demographic and biodiversity features of Madhya Pradesh

Box-2

The administrative demographic and biodiversity features of Madhya Pradesh

Madhya Pradesh, with the total land area of 4,43,000 km², has been divided into 12 revenue divisions, 45 districts, 31, *tehsils*, 459 development blocks (including 174 tribal development blocks). Out of 465 towns/ cities, 23 possess the population of more than one lakh (0.1 million). There are total 76,220 villages and 30,922 village *Panchayats* (up to June 1994), and 40 *lok sabha*, 16 *Raja sabha* and 320 *vidhan sabha seats*. As per 1991 census, total population was 66.181 million (34.267 million males and 31.914 million females), 50.842 million people live in villages and the rest 15.339 million in cities/town. The Scheduled Castes are 9.627 million (14.5% of the total population) and Scheduled Tribes 15.399 million (23.3% of the total population). The working population being 24.934 million (37.7% of the total population) consists of 17.651 million males and 7.283 million females, out of these 51.8% are the farmers as against 38% in the country's working population. The sex-ratio being 931 as against 929 of the country. Only 44.2% population is literate, far behind the country's average of 52.2% of literate population. The agricultural land is 44.343 million ha, useful waste lands 1.529 million ha, total waste lands 1.667 million ha, net sown area 19.657 million ha, total sown area 23.922 million ha, net irrigated land 4.775 million ha, total irrigated land 4.918 million ha. In the year 1993-94, the total production of food crops was 18.56 million MT. The average yields of the main food crops per ha, in the year 1993-94 were 1,226 kg rice, 1,638 kg wheat, 832 kg gram, 1,058 kg Soya bean, and 3,545 kg sugarcane.

Madhya Pradesh being area wise the largest State of Indian sub-continent with respect to territorial (44.3 million ha—about 14% of the country's total area) and forest area (15.4 million ha— which is about 19% of the country's total forest area). Three main types of the forests are distinguished for management purposes:

1. Teak (*Tectona grandis*) dominated forests (2.7 million ha)
2. Sal (*Shorea robusta*) dominated forests (2.5 million ha), and
3. Mixed hardwoods (10.2 million ha).

A total of 305,000 ha of forest plantations have been developed in Madhya Pradesh of which about half were planted prior to 1975 and the remainder were mainly developed by Madhya Pradesh Forest Development Corporation (MPFDC) between 1976 and 1990. Most of the earlier plantations were of teak and mixed species, while the later were mainly teak and bamboo (*Dendrocalamus strictus*). About 5,000 ha of eucalyptus plantations were developed privately.

The State has 11 national parks and 35 wildlife sanctuaries with its 11.7% forest area under the PAs network. Five out of 25 tiger reserves of India have also been established in the State under the Project Tiger. The State is also called the 'Tiger land' for inhabiting the largest tiger population and moreover, the only 'white tiger' land of the country.

Sources: Madhya Pradesh Govt. Diary 1995, Govt. Press, Bhopal; MPFD 1997; and WWF 1998 as quoted in Kushwah , 1998)

Fragmentation of Elephant corridors at Rajaji-Corbett Elephant Reserve – a cause of concern

By

Vinod Khanna*

Recently Zoological Survey of India, Dehra Dun, in association with Indian Institute of Remote Sensing, Dehra Dun, has undertaken a project on the Corridor analysis in Rajaji-Corbett Elephant Reserve, with the author as one of the collaborators. The studies were undertaken in GIS domain. GIS software packages like Arc View, Arc/Info and Erdas Imagine were used for this purpose. The studies were carried out for the three periods i.e. 1966-67, using SOI toposheet, 1986 using Landsat TM image and 1998, using WIFs data (FCC). The forests and non-forest areas in these data were interpreted, digitised and geo-referenced. The entire area of the Corridor Reserve was surveyed for ground truthing of the interpretation.

The Rajaji-Corbett Elephant Reserve is located in the Shivaliks of Uttaranchal State between $77^{\circ} 00'$ and $79^{\circ} 15'E$ longitude and $29^{\circ} 00'$ and $30^{\circ} 30'N$ latitude. Efforts were made to interpret, analyse and detect changes in the state of forest cover / non-forest, vis-à-vis the status of corridors during the three periods i.e. 1976, 1986 and 1998 in GIS environs. The results of the study, depicting the state and extent of degradation of forest are, though not alarming, yet deserve cognizance. The ground truthing in the Rajaji-Corbett Elephant Reserve revealed that the degradation and disturbances in the corridor are threatening to the movement, especially of the female elephants, thereby confining inbreeding within various elephant populations that are repressed to isolated patches/islands. Additionally, the chances of crossbreeding within various island populations are reduced causing restraint on gene flow. Motichur-Chilla corridor, despite being a highly favoured habitat of the elephants, was found to be worst threatened, followed by Kotdwar corridor. The Ramnagar corridor was noticed to be the least disturbed. Recommendations like, construction of wide bridges across Kunao-Chilla Canal, artificial corridors by planting suitable trees and affording higher

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protection status to corridors etc., have been made. The problems and disturbance factors of the study area have been highlighted.

Disturbance factors of the Rajaji-Corbett Elephant Reserve Corridors

- presence of Hindustan Antibiotics Factory,
- establishment of the Raiwala Army Camp and Ammunition Dump near Motichur,
- settlement of the Tehri Dam evacuees in the area,
- the construction of a 14 km long Kunau-Chilla power channel, having a width of 22 metres and depth of 9 metres, with its banks bounded by the cemented slopes at 45° which offers considerable resistance to the smooth movement of the animals specially the female groups. The bulls, however, continue their movements by using three bridges over the canal.
- a state highway and a railway line bisect the corridor that is a continuous threat to the smooth movement of the elephants. The volume of the traffic is too high. About twenty-seven trains pass through the track every day. There have been several reported incidences of the killing of the elephants by the trains.
- though the area has been identified and granted the corridor status since early 1980, hundreds of cattle and people ravage the area for their food, fodder and fuel requirements. On the four islands of Ganges, in Chilla sanctuary, which form a vital link in the corridor area, important food plants for animals are disappearing fast and are being replaced by unpalatable alien species.
- steep terrain and biotic pressure in Kotdwar corridor deter the cow groups from using the corridor.
- since farmers are moved into the habitat of the elephants, the elephant population is now locked into small patches of forest that are surrounded by farmlands. When forced to share space with human being, the elephants become rogue and even attack people occasionally. This happens most often during '*mushl*' when the male goes into the mating frenzy. During this time, it needs a lot of area to roam about.

Problems of the study area

The area has suffered habitat loss, fragmentation and degradation with the passage of time. The area around Rajaji National Park has witnessed :-

- a high increase in the human population, which has accentuated biotic pressure on the forest. The pressure is particularly acute in Chilla forest range because of the discontinuity of the forests, a problem that did not exist earlier.
- The losses of corridors along the eastern and western boundaries of Chilla and similarly around Koh River in Corbett area are the worst example of anthropogenic influences (Kushwaha & Jyotishi, 1996).
- Gujjars, the nomadic tribe, now prefer to stay permanently inside the forests throughout the year. They raise buffaloes for milk and feed them by lopping the trees. Poaching is a menace and conflict between the human and elephants is increasing.

Results

The position of forest can be said satisfactory but if the various activities of the human beings for their subsistence, settlements, poaching etc., and the Gujjar community sharing the area with wildlife, etc., are not checked, it is feared that the poor elephant that has already come under threatened category may be marginalised further.

Acknowledgements

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Preliminary Investigations of Bird Species In and Around Gogelao Enclosure, Nagaur (Rajasthan)

By

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Introduction

Nagaur, a part of erstwhile Marwar state was established by Someshwar, father of King Prathvi Raj Chowhan in 1211 A.D. Later on this was called Ahichhatrapur, Capital of Jangal Janpad. A well known ruler Rao Amar Singh Rathore, the right hand of Shahjahan ruled here. Abul Faizal and Abul Faizy, the Navratan of Akbar were resident of Nagaur. It is situated at the eastern fringe of the Indian Thar Desert.

Study Area

Towards western side of Nagaur city a big "Gogelao Enclosure" is located 2 km away from the human settlements on the Nagaur-Bikaner National Highway No. 89. Gogelao Enclosure comprises nearly 5 sq. km area. Besides this enclosure, the study of water birds is based on different water reservoirs. Ginani, Jaddan and Pratapsagar are perennial water bodies while Telinada is a seasonal reservoir. The landform of this enclosure is plain with few sand dunes at southern side. The average rainfall of this area is 389 mm and temperature varies from 1⁰c to 48⁰c annually. Wind blows here in summer with a velocity of 30-40 kmph and sand storms in summer are very common.

Floral Composition

The vegetation of Gogelao Enclosure and adjoining area is typical desertic scrub grassland type, represented by *Acacia tortolis*, *Capparis decidua*, and *Prosopis cineraria* as a top canopy but the threat of spreading dense *Prosopis juliflora* can be seen in patches in the enclosure. Some other common associates of the vegetation cover are *mimosa hamata*, *Lycium barbarum*, *Crotalaria burhia*, *Tephrosia purpurea* and *Ziziphus rotundifolia* forming

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middle canopy. Grasses of this area are as follows : *Cyperus* sps. *Cenchrus biflorus*, *Cenchrus ciliaris*, *Cynodon dactylon* and *Dactyloctenium indicum*.

Faunal Composition

The major mammalian fauna of the study site consists of Indian gazelle (*Gazella bennetti*), Nilgai (*Boselaphus tragocamelus*), Desert fox (*Vulpes v. pusilla*), Common fox (*Vulpes bengalensis*), Mongoose (*Herpestes edwardsi*), Desert hare (*Lepus nigricollis*) and Desert gerbill (*Merionis humiane*). Amongst non-mammalian fauna, many kind of Arthropods, Amphibians, Reptiles and Avis are easily encountered.

Methodology

Ornithological observations were recorded mainly in this fenced enclosure and water ponds of adjoining area. Observations were recorded at the 15 days intervals during the period from May 2000 to Dec. 2000. Birds were identified with the help of a pair of binoculars (8 X 50 and 10 X 50 Shefied Russian made), characteristics and specific calls of the birds as described by Whistler (1940), Dharmakumara Sinhji (1954), Woodcock (1980) and Ali and Ripley (1987) were referred to in identifying the birds. Observations were recorded on data sheets especially prepared for the purpose. The identified bird species have been listed (Table1) following Ali and Ripley (1983).

Result and Discussion

A total of 80 different birds were identified over a period of 8 months from May 2000 to Dec. 2000. The observations were made mostly in the early morning (0500-0800 hrs.), mid day (1200-1400 hrs.) and evening (1630-1700 hrs.).

Our study says:-

1. Classification of birds, recorded and presented here, according to families, revealed that the family Muscicapidae (Babblers, Wrabblers, Chats, Red start and Robins) is the most dominant one (8 sps. out of which Subfamily Turdinae representing 5 sps.), followed by the family Charadriidae (Lapwings, Plovers, Curlew, Shanks Sandpiper and stint represented by 7 sps., Accipitridae (Kites, Eagles and Vultures) represented by 6 sps., Sturnidae (Mynas and Starling) represented

- by 5 spp. and Ardeidae (Herons and Egrets), Anatiadae and Columbidae (Pigeons and Doves) each representing 4 species. (see Table No. 1)
2. Out of the 80 bird species recorded, 31 (38.75%) species are migratory and rest all show certain local or seasonal movements.
 3. All bird species representing 37 families and 31 bird species are rare meaning that they were not seen regularly in our study time.
 4. Unfortunately, no past information on this subject matter related to the study area is available for comparison.

The present study has generated new information on the avifaunal composition of the Gogelao Enclosure and adjoining ponds of Nagaur (Rajasthan). This information should be useful in establishing and maintaining a bird sanctuary in a sandy to scrub-open terrains especially in situations like the Gogelao Enclosure area which has been fairly well protected for the past one decade by state forest department.

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Table 1

"Checklist of Birds"

S.No.	Family	Common Name		Bionomial Name	Status	Location/Pond
1.	Podicipedidae	Little Grebee	(5)	<i>Podiceps ruficollis</i>		G.P. & P.S.
2.	Phalacrocoracidae	Little cormorant	(28)	<i>Phalacrocorax niger</i>		G.P. & J.T.
3.	Ardeiae	Grey Heron	(36)	<i>Ardea cinerea</i>	R**	T.N.
4.		Pond Heron or Paddy bird	(42)	<i>Ardeola grayii</i>		T.N.
5.		Cattle Egret	(44)	<i>Bubulcus ibis</i>		G.E. & All ponds
6.		Little Egret	(49)	<i>Egretta garzetta</i>		All ponds
7.	Anatidae	Spotbilled duck	(97)	<i>Anas poecilorhyncha</i>		G.P. & P.S.
8.	Accipitridae	Gargany	(104)	<i>Anas querquedula</i>	R	T.N. & G.P.
9.		Shoveller	(105)	<i>Anas clypeata</i>		G.P. & T.N.
10.		Tufted Duck	(111)	<i>Aythya fuligula</i>	R	T.N.
11.		Black winged kite	(124)	<i>Elanus caeruleus</i>	R	G.E.
12.		Pariah Kite	(133)	<i>Milvus migranus</i>	R	All
13.		Shikra	(139)	<i>Accipiter badius</i>	R	G.E.
14.		Tawny Eagle	(168)	<i>Aquila rapax vindhiana</i>	R	G.E. & P.S.
15.		Indian Whitebacked vulture	(185)	<i>Gyps bengalensis</i>	R	G.E.
16.		Egyptian or Scavenger vulture	(186)	<i>Neophron percnopterus</i>		G.E.
17.	Phasianidae	Grey partridge	(246)	<i>Francolinus pondicerianus</i>		G.E.
18.		Jungle bush quail	(255)	<i>Perdica asiatica</i>	R	G.E.
19.		Common peafowl	(311)	<i>Pavo cristatus</i>		G.E.
20.	Rallidae	Indian Moorhen	(347)	<i>Gallinula chloropus</i>	R	P.S. & J.P.
21.		Coot	(350)	<i>Fulica atra</i>		All ponds
22.	Gruidae	Demosille crane	(326)	<i>Anthropides virgo</i>		G.E.
23.	Recurvirostridae	Black winged stilt	(430)	<i>Himantopus himantopus</i>		All ponds
24.		Avocet	(432)	<i>Recurvirostra avosetta</i>	R	G.P.
25.	Burhinidae	Stone curlew	(436)	<i>Burhinus oedicephalus</i>	R	G.E.
26.	Charadriidae	Red wattled lapwing	(366)	<i>Vanellus leucurus</i>		All ponds
27.		Little ringed plover	(380)	<i>Charadrius dubius</i>	R	P.S.

S.No.	Family	Common Name		Bionomial Name	Status	Location/Pond
28.	Charadriidae	Curlew	(380)	<i>Numenius arquata</i>	R	P.S.
29.		Red Shank	(393)	<i>Tringa tetanus</i>	R	P.S.
30.		Common Sand piper	(401)	<i>Tringa hypoleucos</i>		All
31.		Little stint	(416)	<i>Calidris Minuta</i>	R	P.S.
32.		Green Shank	(396)	<i>Tringa nebularia</i>	R	P.S.
33.	Laridae	Indian River turn	(463)	<i>Sterna aurantia</i>		J.P.
34.	Pteroclididae	Indian Sandgrouse	(487)	<i>Pterocles exustus</i>	R	G.E.
35.	Columbidae	Blue rock pigeon	(516)	<i>Columba livia</i>		All
36.		Indian Ringdove	(534)	<i>Streptopelia decaocto</i>		All
37.		Red turtle dove	(535)	<i>S. tranguabarica</i>		All
38.		Little brown or Senegal dove	(541)	<i>S.senegalensis</i>		All
39.	Psittacidae	Roseringed Parakeet	(550)	<i>Psittacula kameri</i>		All
40.	Cuculidae	Common Hawk-Cuckoo or Brainfever bird	(573)	<i>Cuculus varius</i>	R	G.E.
41.		Crow Pheasant or Coucal	(600)	<i>Centropus sinansis</i>	R	G.E.
42.	Strigidae	Great Horned Owl or Eagle owl	(627)	<i>Bubo bubo</i>	R	G.E.
43.		Spotted owl	(652)	<i>Athene blewitti</i>		G.E.
44.	Apodidae	House Swift	(703)	<i>Apus affinis</i>		All
45.	Alcedinidae	White breasted kingfisher	(735)	<i>Halcyon smyrnensis</i>	R	P.S.
46.	Meropidae	Green Bee-eater	(750)	<i>Merops spercilliosus</i>		All
47.	Coraciidae	Indian Roller or Blue Jay	(755)	<i>Coracias bengalensis</i>		G.E.
48.	Upupidae	Hoopoe	(762)	<i>Upupa epdos</i>		G.E.
49.	Picidae	Lesser Golden backed wood pecker	(819)	<i>Dinopium benghalense</i>	R	G.E.
50.		Yellow fronted pied woodpecker	(847)	<i>Picoides mahrattensis</i>		G.E.
51.	Alaudidae	Rufous tailed finchlark	(882)	<i>Ammananes phoenicurus</i>		G.E.
52.		Crested Lark	(899)	<i>Galerida cristata</i>		G.E.
53.	Hirundinidae	Dusky Carg Martin	(914)	<i>Hirundo concolor</i>	R	G.E.
54.	Laniidae	Grey shrike	(933)	<i>Lanius excubitor</i>		G.E.
55.		Rufousbacked Shrike	(946)	<i>Lanius schach</i>	R	G.E.

S.No.	Family	Common Name		Bionomial Name	Status	Location/Pond
56.	Dicruridae	Black drongo or King crow	(963)	<i>Dicrurus adsimilis</i>		G.E.
57.	Sturnidae	Black headed or Brahminy Myna	(994)	<i>Sturnus pagodarum</i>		All
58.		Rosy pastor	(996)	<i>S. roseus</i>	R	G.E.
59.		Starling	(997)	<i>S. vulgaris</i>		G.E.
60.		Common myna	(1006)	<i>Acridotheres tristis</i>		G.E.
61.		Bank myna	(1008)	<i>A. ginginianus</i>		All
62.	Corvidae	House crow	(1049)	<i>Corvus splendens</i>		All
63.		Raven	(1059)	<i>C. corax</i>		G.E.
64.	Pycnonotidae	White checked bulbul	(1123)	<i>Pycnonotus leucogenys leuotis</i>		G.E.
65.	Muscicapidae sub family	Red vented Bulbul	(1128)	<i>P. cafer</i>		G.E.
66.	Timalinae	Common babbler	(1254)	<i>Turdoides caudatus</i>		G.E.
67.		Large gray babbler	(1258)	<i>T. melcolmi</i>		G.E.
68.	Sylviinae	Rufous fronted warn - Warbler	(1506)	<i>Prinia buchanani</i>	R	G.E.
69.	Turdinae	Rufous chat	(1641)	<i>Erythropygia galactotes</i>	R	G.E.
70.		Black Redstart	(1971)	<i>Phoenicurus ochruros phoenicuroids</i>	R	G.E.
71.		Pied Bush chat	(1700)	<i>Saxicola caprata</i>	R	G.E.
72.		Pied chat	(1712)	<i>Oenanthe isabellina</i>		G.E.
73.		Indian Robin	(1720)	<i>Saxicoloides fulcata</i>		G.E.
74.	Motacillidae	Yellow headed wagtail	(1883)	<i>Motacilla citreola</i>	R	T.N. & P.S.
75.		Pied or white wagtail	(1885)	<i>M. alba</i>		T.N. & P.S.
76.		Large pied wagtail	(1891)	<i>M. maderaspatensis</i>		T.N. & P.S.
77.	Nectariniidae	Purple sunbird	(1917)	<i>Nectarinia asiatica</i>		G.E.
	Ploceidae Sub family					
78.	Passerinae	House sparrow	(1938)	<i>Passer domestica</i>		All
79.	Ploceinae	Baya	(1957)	<i>Ploceus philippinus</i>	R	G.E.
80.	Estrildinae	Common silver bill or white throated munia	(1966)	<i>Louchura malabarica</i>		G.E.

* Numbers mentioned in parenthesis are bird number given by Ali & Ripley (1987)

** R, rarely encountered species in this area.

G.E. – Gogelao Enclosure; G.P. – Ginani Pond; T.N. – Teli Nada; J.P.- Jaddan Pond; P.S. – Pratap Sagar

Socio-Ecological Study & Breeding Control of *Boselaphus tragocamelus* (Antelope)

By
Dinesh C. Agnihotri*

Abstract

Boselaphus tragocamelus (Blue Bull or Neelgai) is a very common antelope found in open as well as dense area of Chandpur (U.P.). This paper highlights its socio-ecological and economical study. Observational studies were also made on the population control of this animal.

Introduction

This paper aims to provide upto-date information about *Boselaphus tragocamelus* and its eco-social behaviour with special reference to observational study on breeding control graph, (Agnihotri, 2000). The Neelgai, (*Boselaphus tragocamelus*) is a very common migratory antelope found in Chandpur area of U.P. It ranges from the border of district J.P. Nagar, upto the border of Haldaur area of district Bijnor. They are also found along the main railway track, road side as well as Ganga river Khadars and open fields in the West (Roonwal, 1983). The common site of this animal is open fields covered with vegetation. This wild animal raids the crops during mid night and also in summers at day time, causing serious losses to the farmers of this area. Sometimes they can completely damage rice, wheat, sugar cane, crops shattering the economy of the area. Although this animal is very shy of human beings (Prater, 1980). Of late it has become serious problem to the agriculture of this area as well as whole of U.P. (Prakash, et al., 1986). It finishes the entire crop in no time during nights like goats (*capra hircus*) and sheep (*Ovis orientalis*), (Ghosh, et al., 1987). It is very fast runner' and can jump very high also.

Distribution

At present this antelope is widely distributed and is found in 'herds' near agricultural lands, mainly sugar cane crops, Khadar etc. Sugar cane crop area is a very suitable place for long time rest and shelter. This animal usually feeds on soft newly growing crops and can finish the whole area over acres, thus causing serious losses to the farmers.

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This animals is widely distributed in plains of Western India and is not found in Bengal or Assam or any where in eastern India and also in the Malabar Coast of Madras, (Prater 1980; Frank 1929).

Method of Study

Mostly there is a single dominant male in a herd. The herds have two types of units, one is bisexual and other is young adult all male group or both male and female comprising 8-10 individuals. A bisexual herd has at least few individuals both male/female of all age groups. Mostly there is one male adult in a bisexual herd who can lead the group but sometimes two or more can be seen in one herd. These herd can mostly be seen from November to February and very commonly during harvesting period i.e., April to May. During the day time these can be seen near the sugar cane fields, nearby soft vegetation and most likely near water 'holes'.

Observations

This antelope (Neelgai) is purely herbivorous and depends on small plants and also grazes on small vegetation especially agricultural crops. This animal can jump over 7-8 feet high fence or stone wall. Fire or gun shots are not effective to deter this animal. The herds generally come out in the evening or late night. First they discharge their urine and then faecal matter too, then move for raiding the fields. It raids the fields generally in late evening, early morning hours or during mid-nights also. Generally it is nocturnal in habit and rests in day time. They usually assemble at the places where their faeces are deposited, like deers.

One adult Neelgai was found dead in road side ditch (khai) as reported in Dainik Jagran, Meerut edition on 11 November 1998. The cause of this death was negligence of the forest department 'Chandpur range'. This incident was reported by the local people for medical help. It was struggling for life for hours and when no medical help reached ultimately it died. The local people and concerned authorities did nothing about this. The local people picked out the dead body of the animal and photographed. This case was reported by the wildlife faculty of Hindu Inter College, Chandpur, Bijnor (U.P.) which is member of WPSI Dehradun. The faculty is working for creating awareness for protection and preservation of wildlife in this area.

Discussion

The main aim of present paper is to give upto date knowledge of breeding control and socio-economy of neelgai. At present this animal is wandering near the human habitations, agricultural lands, roads and railway tracks etc. This animal meet serious accidents usually on roads as well as railway line. Due to deforestation and colonisation the natural habitat of this animal has been destroyed and it is wandering for shelter and food. It is now adopted to human habitations and agricultural land. Though docile by nature but when confronted they become aggressive and have been known to attack humans. They sometimes come under speeding trucks, buses and rail engine when dazzled by headlight. Deaths of this animal by motor vehicles and rail engines are common.

Neelgai is a very sensible animal. They have the sense of returning to its previous spot, like the other ungulates. It is also a local migratory animal. When in a group of 4-5, they sometimes attack the humans.

Conclusion

The conclusions made after this study are that due to deforestation and colonisation the natural habitat of Neelgai has been destroyed. This has forced this animal to change its habits and habitat as well. Afforestation of wasteland near villages and enrichment of vegetation and density of reserved forests can alter the situation. Neelgai will then be rehabilitated in the forests and will not raid the agricultural crops. The socio-economic condition of the farmers will then be ameliorated. The State Forest Department will be well advised to create a Neelgai Sanctuary in reserved forest bordering Bijnor district.

Neelgai is a fast breeder. It breeds twice in a year and gives, birth to four to five fawns at a time. This has resulted in rapid increase in its population which has increased to menacing proportions. A check has, therefore, become necessary on the rising population of Neelgai. No effective means are in sight for checking the population of Neelgai except spraying or fogging of some contraceptive chemicals on the vegetation on which Neelgai feeds. This method is only in the experimental basis and is being tried in countries like Kenya, Uganda and others in Africa (Agnihotri, 2000). This can help in checking the population of Neelgai and provide relief to farmers of this area.

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Threat to India's Tiger and Elephant Corridors

**By
Bulu Imam***

There is a greater need today than ever before in megabiodiversity-rich regions of the developing world to realize the importance of wildlife corridors, areas of transference and connectivity between one habitat and another, especially in the case of threatened animals such as tigers, elephants, gaur and rhinos. These animals are used to going very long distances sometimes dozens of miles, even over fairly open country under the cover of darkness. When I drew attention to the threat from opencast coal mines to the tiger, elephant, and gaur corridors in the upper Damodar valley of Hazaribagh in the face of the North Karanpura mining project thirteen years back, it met with scorn from professional wildlifers who saw in it a veiled threat to the development of the region. However, since the matter over the years has received international attention these corridors have found many wildlifers to champion their cause.

What we have to now do is build on this example. I have decided to start a nation-wide campaign for the documentation and fight to save such threatened corridors across India. In this I must say I have been grateful in the support offered to my campaign by Bittu Sahgal and the Bombay Natural History Society, respectively. The areas we are going to look at are not necessarily habitats themselves, but simply zones of transference or connectivity between one habitat and another, with particular reference to threatened Red Data Book species such as tiger, elephant, Gaur and Rhinoceros. These areas, precisely not being habitats in themselves, do not receive the protection which they deserve and a single nod from the Forest Department brass get clearance whereas they should otherwise have been protected. An example recently is the clearance given by the PCCF (Bihar) to the opencast mining in the North Karanpura region. As I have pointed out, since these corridor areas are not in themselves habitats, they easily get clearance for mining, industry, dams, etc. The Piperwar, Ashoka-I and II opencast mines are a case in point. The elephant corridor along the Damodar river was given clearance for huge opencast mines. In fact this is what has been all along happening across India for the past fifty years as one great bio-

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region after another has succumbed to destructive development through mines, dams, industry. I believe that this destruction has been actively supported by the forest and wildlife authorities because I can see no way how it received sanction of the government. There is a huge mining project going on just now with over four hundred opencast mines across southern Jharkhand, Madhya Pradesh, Eastern Maharashtra and Orissa. Some years back Philip Carter the British-Canadian journalist and world expert on corridors had brought to international attention the threat through coal mines to the North Karanpura valley (1997). This led to interest in the region. Philip started a special website for Thousand Tigers Ecosystem as we called it then. The web address is: www.web.net/pcarter/hazaribagh/

Massive opencast mining in Lalmatiya in the Godda region of northeastern Jharkhand is mercilessly destroying wildlife corridors in the Rajmahal Project. The project is one of the largest opencast mining projects of Eastern Coalfields Limited and the coal production is being carried out in collaboration with Met-Chem Canada Inc. It has displaced six thousand tribals.

The wildlife corridors of Parasnath and Koderma Wildlife Sanctuary have been severed. Wild elephants have been known for some time to have been in a similar panic as was seen in the severance of the Chandil-Purulia wildlife corridor in Dalma in Singhbhum when elephants broke out and marched across open paddy fields to Haldia. Similar events occurred not long back west of Asansol. I quote below five instances of damage being done currently to tiger and elephant corridors in Orissa state. 1. Saranda-Sundergarh between Orissa and Jharkhand 2. Debrigarh-Raipur between Orissa and Madhya Pradesh 3. Sunabara-Raipur between Orissa and Madhya Pradesh 4. Narayanpatna-Narsinghpattam between Orissa and Andhra Pradesh 5. Chitrakunda-Balimeda-Sileru between Orissa and Andhra Pradesh. Anyone interested may contact Surjit Bujabal, Wild Orissa at wildorissa@hotmail.com.

The destruction of the tiger and elephant corridors of North Karanpura must by now be familiar to most wildlifers. Interested persons and organizations may look up Thousand Tigers website I have given and if they want to write to Philip Carter at his email pcarter@web.net or myself bulu@koel.indiax.com we shall be happy to interact with them.

What I want to ask is how fifty years after winning our freedom from British colonialism we still have to fight the government at every step to try and stop

such shameless, unlawful, and indecent destruction of our last remaining wildlife habitats and ecosystems. The wildlife corridor is part of the ecosystem, and this realization must begin to sink into the national consciousness. It is as vital to tigers and elephants as a highway to you or me. I have personally taken up the mission to save the threatened wildlife corridors of Hazaribagh and after thirteen years of active campaigning I am happy to say that they have been at last recognized. Recently the World Bank withdrew 30 million dollars from Central Coalfields Limited in the North Karanpura Valley. I see it as partly to do with the fact the Bank could not get around the wildlife corridors study it had promised three years back but could never get done. We need an all-India campaign for saving wildlife corridors throughout India if we have a thought for the practical conservation of our endangered megafauna. After all so much fuss is made about tribals in wildlife sanctuaries, can't we understand the much larger threat to these regions by direct dissection of corridors? The recent plan by the government to construct a four-lane highway and railway line through the Hazaribagh National Park just north of the Hazaribagh town will be known to most readers by now. How long are we going to go on fighting such nonsense? The matter deserves the attention of the World Conservation Union more forcefully than it has been given before. Write to Peter Jackson, Chairman, Cat Specialist Group at pjackson@iprolink.ck. Thank you.

Vanishing Vulture Population– A Threat to Scavenging

By

Vinod Khanna and D.P. Uniyal*

Zoological Survey of India has been undertaking the task of survey and inventorying the fauna in various states and ecosystems. During one of the recent surveys conducted by the authors in the state of Punjab, an alarming decline in the vulture populations was noticed. In the districts of Ropar, Hoshiarpur, Pathankot, Nawanshar the carcass of the cattle, domestic and wild animals, were seen lying un-decomposed at various places for many days, This raised the eyebrows of the authors. There were hardly any vultures and none hovering around the carcass or doing its scavenging business.

On discussions with the villagers and farm people and after consulting various published accounts relating to the phenomenon, it was gathered that:

-the villagers feed their cattles on chemically treated Alsi (Linseed), which they say, is good for higher yield of milk, but the chemical contents of alsi, which is passed on indirectly to the vultures through the dead livestock, are toxic and cause mortality in vultures.

- the use of excess of chemicals as farm manure.

- the excessive use of insecticides and pesticides on crops.

The pesticides and insecticides are highly bio-accumulative and can make egg shells thin, leading to death of embryo and breeding failure among raptors like vulture, which are slow breeders (Ahmed, K., 2000). The pesticides can have a tremendous impact on bird population. The pesticides like DDT, Dieldrin and Aldrin are used extensively in India.

- death due to poisoning, lack of food, annihilation by human being are some of the other factors that have also been taken into consideration.

- Adino-virus causes head drooping in vultures (Head drooping Syndrome or HDS). This has also been reported as one of the causes for large scale death in vultures.

Dr. Vibhu Prakash of Bombay Natural History Society first noticed the unusual pattern of mortality in vultures in Keoladeo Ghana National Park, Bharatpur, followed by various researchers and stray observers who have reported such observations on population decline in vultures through various scientific and non-scientific publications.

There has not been any news of the government undertaking any kind of the project to protect the fast depleting vulture species in India. What would happen to the mammoth and ever piling garbage and the un-decomposed material? If not vultures then who will perform the scavenging business? It's a matter of concern to one and all. Something must be done to conserve and protect these important scavenging agents. Their extinction is not only a threat to decline in avian diversity but to human kinds also. Scavenging is under threat.

There are eight species of vultures in India, viz., **White-backed** (*Pseudogyps benghalensis*), **Indian Long-billed Griffon** (*Gyps indicus*), **Indian Fulvus** (*Gyps fulvus*), **Himalayan Griffon** (*Gyps himalayensis*), **Indian Scavenger** (*Neophron percnopterus*), **Bearded vulture** (*Gyptaeus barbatus*), **Red-headed vulture** (*Sarcogyps calvus*) and **Cinereous or European black vulture** (*Agegyptius monachus*), of which the white backed and long billed are the worst effected (Satheesan, S.M. 1999). This decline in population of the vulture is not restricted to India alone. There are some references over the issue is that have been reported from outside India also.

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गेंडे का संकट - सींग

द्वारा

रामेश बेदी*

गेंडे की पहिचान सींग से होती है। किन्तु सींग ही गेंडों के लिये अभिषाप सिद्ध हुआ है। सींग के लिये गेंडों का निरंकुश शिकार किया जाता है। ऐसा विश्वास-किया जाता है कि गेंडे के सींग में अद्वितीय औषधीय गुण निहित हैं। ईसा से पूर्व भी गेंडे के सींग की भारी मांग थी।

- सम्पादक

विश्वास किया जाता है कि रोमन साम्राज्य में पूर्व तथा अफ्रीका दोनों से गेंडे के सींग जाते थे। सीजर्स के जमाने में लाल सागर तक गेंडे के सींग तथा खालों का व्यापार होता था। यूरोप और चीन में इन सींगों का निर्यात बहुत लाभदायक व्यापार था। ईसा के समय रोमन साम्राज्य में जो भी सींग पहुंचे उनमें से अधिकतर अफ्रीका के थे। परंतु, ईसा के बाद संभवतः भारतीय गेंडे के सींग जाने लगे और उसके बाद फिर सुमात्री गेंडे (*Rhinoceros sumatrensis*) के। लेकिन, पिछला सींग चीन के बाजार में खप जाता था। मलेशिया से चीन को सींग का व्यापार बाद में शुरू हुआ। यु-नान-त्सा-त्सु पुस्तक में, जो लगभग 860 ईस्वी पश्चात् में लिखी गई, इस सींग को हितम के नाम से लिखा है जिसका अर्थ काला होता है। यह मलयी भाषा का शब्द है। व्यापार में तक 'सफेद' और 'काला' क्रमशः हाथी दांत और गेंडे के सींग को कहते थे।

चीनियों को बहुत देर तक सींग के मूल स्रोत का सही ज्ञान नहीं हो पाया। लगभग 1200 ईस्वी पश्चात् भी चाउ-जु-कुआ सोचता था कि अरब लोग उस देश में रहते हैं जहां वे चीन के लिए सींग लाते हैं। उसने इसकी उपलब्धि के बहुत से स्रोत लिखे हैं जिनमें से टान् किन, अनाम, मलय प्रायद्वीप, जावा, भारत और जंजीबार तट हैं। विवरण के अनुसार सबसे बढ़िया सींग अफ्रीका प्रतीत होते थे और बर्बेरा तट से प्राप्त किये जाते थे। वे काले की अपेक्षा सफेद अधिक थे। 1537 में मलक्का, जो चौथाई सदी से पुर्तगालियों के अधिकार में था, का गेंडे के सींग का महत्वपूर्ण निर्यात व्यापार था।

विविध उपयोग

खाल से गहने और मूर्तियां

असम के आदिवासी गेंडे की खाल की अंगूठियां और गहने बनाकर पहनते हैं। नेपाल में यह अंगूठी इस विश्वास से पहनी जाती है कि यह उन्हें अज्ञात कष्टों से बचाती है। नेपाल

* बेदी शोध-संस्थान, डी-28 राजौरी गार्डन, नई दिल्ली -110027।

तथा अफ्रीका में गेंडे के चमड़े की बेंट हाथ में रखना शौकीन-मिजाजी समझी जाती थी। यह लचकदार होती है और सामान्यतः 60 से 75 सेंटीमीटर से बड़ी नहीं होती।

शाही घरों में और खानदानी रईसों के घरों की बैठकों में गेंडे की खाल की बनी मूर्तियां, खिलौने, देवी-देवताओं की प्रतिमाएं आदि अनेक कलात्मक चीजें सुशोभित होती हैं। गेंडे के चारों पैरों की गिट्टे तक की खाल को निकाल लेते हैं। इससे बड़े आकार का, 15 से 18 सेंटीमीटर गहरा, प्याला बना लेते हैं। बैठकों को सजाने में इसका अनेक प्रकार से उपयोग करते हैं। अनेक बार घुटने तक खाल निकाल ली जाती है जिसके साथ पैर का तला और नाखून भी रहते हैं। 30 से 45 सेंटीमीटर ऊंची इस खोखली खाल को फूलदानों की तरह इस्तेमाल करते हैं। नेपाल के रईसों के पास मैंने इसके मोढ़े बने देखे हैं।

गेंडे की खाल से बनी ढालों के ऊपर बड़ा सुंदर, सुनहरा, काम किया जाता है। शिकार संबंधी घटनाओं की दृश्यावलि या चित्रित की जाती है। राजस्थान के भूतपूर्व राजपूत राजाओं के शस्त्रागारों और महलों में अलंकरण की यह बढ़िया चीज देखी जाती है। दीवारों और खंभों पर टंगी ढालों पर ओजस्वी किरणें बिखेरता हुआ सूर्य और शिकार की घटनाओं की दृश्यावली चित्रित होती है।

गेंडे के सींग को नेपाल में खाग कहते हैं। श्राद्ध में अर्घ्य देने का पात्र खाग से बनाया जाता है, जिसे नेपाली में खगौती कहते हैं। यह लंबोतरा पात्र बाहर से सोना, चांदी आदि धातुओं द्वारा मढ़ा होता है। उसके ऊपर देवी-देवताओं की आकृतियां और प्रायः सूर्य का चित्र तथा अन्य अलंकरण कलात्मक ढंग से बनाये होते हैं। गेंडे का सींग न मिले तो उसकी खाल, हड्डी या घुटने की चपनी (Knee-cap) की खगौती बना ली जाती है।

कनफटे जोगियों के कुंडल और सिंहनाद

नाथ-पंथियों के गले में सूत के धागे में एक सीटी बंधी रहती है। नाथों का यह महत्वपूर्ण चिन्ह है। यह सीटी सामान्यतः कृष्णमृग अथवा गेंडे के सींग से बनाई जाती है। इसे सिंहनाद कहते हैं। कापालिक भी सिंहनाद धारण करते हैं। मत्त विलास प्रहसन के अनुसार इसे केवल भोजन शुरू करने से पहले बजाया जाता है। सिंहनाद के अलावा नाथ-पंथी गले में रुद्राक्ष का एक दाना धारण करते हैं। यह काली भेड़ की ऊन के 60 सेंटीमीटर लंबे धागे में पिरोया जाता है। गले के पवित्र धागे, रुद्राक्ष और सिंहनाद का शैली कहते हैं। साधुओं के सामान में शैली अनिवार्य पदार्थ है। यह टूट जाय तो साधु नई शैली धारण कर लेने पर ही भोजन ग्रहण करता है।

कनफटे जोगी कानों में एक बड़ा छल्ला पहनते हैं। यह चपटा अथवा गोल होता है। चपटे को दर्शन और गोल को कुंडल कहते हैं। बड़े छल्ले की परिधि साढ़े-सत्रह सेंटीमीटर हो सकती है। दर्शन और कुंडल दोनों को मुद्रा कहते हैं। मुद्रा बनाने के लिए गेंडे का सींग सबसे अच्छा पदार्थ माना जाता था (इण्डियन साधूज, जी. एस. धुर्ये, 1964)।

वन्य पशु-पक्षियों की रक्षा करने की भावना से भारत का डाक-तार विभाग गेंडे के चित्र वाली टिकटें जारी करता रहा है। नेपाल और दक्षिण अफ्रीका के डाक टिकटों पर भी गेंडा शोभायमान है।

गेंडे की उदरगुहा में श्राद्ध-कर्म

नेपाल में गेंडे का मांस स्वादिष्ट और पवित्र माना जाता है। वहां विश्वास किया जाता है कि पितरों को इस पशु का मांस और खून अत्याधिक पसंद है। शाही खानदान से संबद्ध उच्च वर्ण के हिंदू और गुरुखे इसके शरीर के अंदर घुसकर पितरों को इसके खून का तर्पण देते हैं। श्राद्ध के दिनों में सींग से बनाये हुए प्याले (खगौती) में दूध की लस्सी को भरकर पितरों को समर्पित किया जाता है। जिन लोगों के पास सींग नहीं होता वे इसकी खाल से बनाये पात्रों के द्वारा श्राद्ध-कर्म कर लेते हैं।

श्राद्ध-कर्म के लिए विशेष रूप से महाराजा गेंडे का शिकार करते थे। उसकी आंतों और आमाशय को निकाल दिया जाता था। तब महाराजा शरीर के अंदर प्रवेश करते थे और उदर-गुहा में बैठकर श्राद्ध-कर्म संपन्न करते थे, छाती के भागों से रक्त लेकर पूजन करते थे और पितरों को रक्त का तर्पण करते थे।

पवित्र आहार और पथ्य

असम जंगलों के लोग गेंडे का मांस खाते हैं। दूसरे मांसों के समान यह भी प्राचीन भारत में आहार का द्रव्य रहा है। मनु, याज्ञवल्क आदि संहिताकारों ने और चिकित्सा शास्त्र के आचार्य सुश्रुत ने इसे पितरों को समर्पित किया जाने वाला पवित्र मांस बताया है। श्राद्ध में पितरों को अनेक प्रकार के मांस तथा अन्य पदार्थ दिये जाते थे। मनु महाराज (200 ईस्वी पूर्व) की राय में इन पदार्थों में सर्वोत्तम गेंडे का मांस है क्योंकि इससे पितरों की अनंतकाल के लिए तृप्ति हो जाती है :

कालशाकं महाशल्काः खड्गलोहामिषं मधु ।
आनन्त्यायैव कल्प्यन्ते मुनयन्नानि च सर्वशः ॥

मनुस्मृति, अध्याय 3; 272., (याज्ञवल्कसमृति, अध्याय 1; 259 भी देखें)

प्रतीत होता है कि घास-पात खाने वाले चौपायों में सबसे अधिक दुर्लभ होने के कारण ही इसके मांस को सबसे श्रेष्ठ समझा जाता था।

ग्यारहवीं शताब्दी के अंत तक हमें इस मांस के प्रति हिंदुओं की इसी प्रकार की भावना के प्रमाण मिल जाते हैं। सुश्रुत संहिता के व्याख्याता आचार्य डल्हण (1100 ईस्वी पश्चात) ने भी

इसे पितरों के लिए हितकर बताया है। सुश्रुत की सम्मति में यह कसैला है, रूक्ष है, स्रावों को सुखाता है, मूत्र कम करता है, कफनाशक है और वायु को हरता है :

कफघ्नं खड्गपिशितं कषायमनिलापहम् ।
पित्र्यं पवित्रमायुष्यं बद्धमूत्रं विरूक्षणम् ॥

सुश्रुत संहिता, सूत्रस्थान 46; 103.

चरक ने इस मांस को बल बढ़ाने वाला, शरीर में स्निग्धता बढ़ाने वाला, पौरुष बढ़ाने वाला, मधुर, रंग को निखरने वाला, वायु को हरने वाला और थकान को उतारने वाला माना है :

खड्गमांसमभिष्यन्दि बलकृन्मधुरं स्मृतम् ।
स्नेहनं बृंहणं वर्ण्यं श्रमघ्नमनिलापहम् ॥

चरक संहिता, सूत्रस्थान 27; 84-85.

यह मांस को बढ़ाने वाला आहार है। इसलिए, राजयक्ष्मा (तपेदिक) में मांस का जब क्षय हो जाता था तब मसालों के साथ पकाए हुए गेंडे का मांस रोगी को खिलाया जाता था। रोगी इसे खाने में अरुचि दिखाता था तो उसे भैंस के मांस के नाम से दे देते थे :

गजखड्गितुरंगणार्णां वेशवारीकृतं भिषक् ।
दद्यान्महिषशद्वेन मांसं मांसमिवृद्धये ॥

चरक संहिता, चिकित्सास्थान 8; 154.

डॉक्टर हैमिल्टन ने अपनी बरार पुस्तक में लिखा है कि उसके समय में भी हिंदू चिकित्सक मांस को उबालकर घी के साथ टायफस ज्वर की अंतिम अवस्थाओं में देते थे। तालीफ शरीफ (1833) में मांस को वायु के विकारों को दूर करने वाला बताया है।

असम के आदिवासी गेंडे को मांस इस विश्वास से खाते हैं कि यह खून को शुद्ध करता है और मरने के बाद उन्हें स्वर्गलोक पहुंचाता है।

दिल्ली के फिरोजशाह कोटला में खड़े अशोक स्तंभ में अशोक के आदेश खुदे हुए हैं। इसके पांचवें लेख में गेंडे को खाना मना किया गया है।

गेंडी के दूध की चाय

उगाण्डा नेशनल पार्क में एक बार सफेद गेंडे पकड़े जा रहे थे। पकड़ने वाले दल को मां के साथ एक बड़ा बच्चा दिखाई दिया। वे एक पेड़ के नीचे आराम कर रहे थे। दल ने जब

शुरू में उन्हें देखा तब वे 500 मीटर की दूरी पर थे। यह दल ट्रकों में सवार था। 150 मीटर का फासला रह जाने पर गेंडों ने भागना शुरू किया। कुछ देर की मेहनत के बाद बच्चा तो पकड़ लिया गया पर उसकी मां भाग गई। अगले रोज दल ने उसी वन-खंड में मां को तलाश कर लिया। उसे पकड़ने में भी उन्हें सफलता मिल गई। रस्सों से जकड़ने के बाद यह आवश्यक था कि उसके पास एक तिरछा गड्ढा बना लिया जाय जिसमें ट्रक को पिछली ओर से उतारा जाय। इससे गेंडे को ट्रक में लादना आसान हो जाता है। सूखी, कड़ी जमीन को खोदने में कुछ मजदूर लग गये।

दूसरी ओर चाय का पानी उबलने रख दिया गया। पानी तैयार हो जाने पर मालूम पड़ा कि दूध का डिब्बा लाना तो रसोइया भूल ही गया है। दल के एक सदस्य को सूझा कि क्यों न उस गेंडी के दूध से चाय बनाई जाय। उसने उसके थनों को सहलाना शुरू किया। बिछुड़े हुए बच्चे को चुंघाने के लिए पयोधर में दूध भरा था। गाढ़ा, क्रीम जैसा दूध निकल कर उसने चाय के पानी में मिलाया और पी गया। दुनियां में गेंडी का दूध पीने वाले ये पहले इंसान थे।

मां और बच्चे दोनों को मुख्य शिविर में बनाये एक विशाल बाड़े में खुला छोड़ दिया गया। उनकी गंध पाकर रात को एक जंगली गेंडा उधर आ गया। संभवतः यह बच्चे का पिता था और विपत्ति में फंसे अपने छोटे से परिवार को छुड़ाने के उद्देश्य से आया था।

दवादारु में उपयोग

लगभग दो हजार साल पहले भारत के चिकित्सक महर्षि चरक ने गेंडे के विभिन्न अंगों में भेषजीय उपयोगिता प्रतिपादित की थी। मध्ययुग में यूरोप में भी इसके सींग के विचित्र गुणों की धाक थी। लंदन की दवासाजी में 1741 तक सींग की मांग के प्रमाण हमें मिल जाते हैं। उस वर्ष छपी भेषज संहिता (फार्माकोपिया) में गिनाई गई आवश्यक औषध-द्रव्यों की सूची में यह परिसंख्यात है।

लिंखोटन (1590) ने देखा था कि गेंडे के दांत, नाखून, सींग, मांस, खाल, खून, लीद और पेशाब भी भारत में बहुत से रोगों की चिकित्सा में काम आते हैं। उसने खुद भी उन्हें आजमाया था और अपने अनुभव में सचमुच लाभदायक पाया था। उसने लिखा है कि सभी गेंडे एक समान अच्छे नहीं होते। अलग अलग प्रकार के जंगलों में तरह तरह की बूटियां खाने से उनके सींग तथा देह की बनावट में अंतर आ जाता है। इसलिए उनके अंग-प्रत्यंग के गुण भी बदल जाते हैं।

हुबक ने रिपोर्ट दी थी कि लीद के अलावा इसके प्रत्येक भाग की चीन में इतनी अधिक मांग है कि मलय प्रायद्वीप में यह नष्ट हो रहा है। फ्लावर ने लिखा था कि मलय निवासियों के लिए गेंडे को मार कर चीनियों को बेच देना अधिक मुनाफे का धंधा था क्योंकि किसी भी यूरोपियन से उन्हें जिंदा गेंडे का इतना दाम नहीं मिलता था।

यौवन और पौरुष के लिए

अब भी गेंडे के प्रत्येक भाग के ग्राहक मिल जाते हैं। उगाण्डा के जंगलों की यात्रा के दौरान कॉलिन विल्लौक (1964) ने नैरोबी की एक दुकान पर एक सींग से बनी एक दवा 'लव पोशन' देखी थी जिसके लेबल पर लिखा था :

महाराजाओं, लखपतियों और धनियों के लिए उपयोगी दवा :

बूढ़े को जवान और जवान को बेकाबू बना देती है।

सींग के गुणों के बारे में इस प्रकार के विश्वास सारी दुनियां में कम या अधिक प्रचलित हैं। भारत, तिब्बत, म्यांमार, चीन, थाइलैंड और न जाने कितने ही देशों में व्यापक रूप से विश्वास किया जाता है कि सींग में यौवनवर्धक गुण निहित हैं। खोई हुई शक्ति, यौवन और पुरुषत्व को प्राप्त करने के लिए इसका चमत्कारी प्रभाव माना जाता है। मलय में इस सींग को चुला कहते हैं। मलय के आदिवासी इसे अत्यंत मूल्यवान पौरुषवर्धक पदार्थ मानते हैं (मलय मैजिक, वाटर विलियम स्कीट 1900, पृष्ठ 150)। इसलिए इन सभी देशों में सींग की खपत है। पुरानी दिल्ली के बाजारों में मैंने मजमा लगाकर दवाइयां बेचने वालों के पास गेंडे का सींग देखा था। वाजीकरण तिलों और गठिया के लिए उपयोगी तेलों के निर्माण में वे इसे अन्य जान्तव पदार्थों के साथ मिलाकर पका लेते हैं। प्राचीन और मध्यकाल के लोगों की कल्पना में सीधा तना हुआ सींग प्रहर्षित लिंग सदृश जान पड़ता था। प्रतीत होता है कि इसीलिए वे इसका उपयोग वाजीकरण के लिए करने लगे।

विष निवारण के लिए सींग के प्याले

लिंश्खोटन (वॉयजेज टु दि ईस्ट इण्डोज, 1590) ने ईस्ट इण्डोज की यात्राओं में इस सींग को विष के निवारण के लिए तथा अनेक रोगों में उपयोगी औषध लिखा था। अरबों का विश्वास था कि इस सींग के बनाये प्याले में पेय पदार्थ पिए जायं तो विष का असर नहीं होता। पुराने जमाने में लोग इस सींग के बड़े सुंदर, कामदार प्याले बना लिया करते थे। विश्वास किया जाता था कि इनमें विष की पहचान हो जाती है। कहा जाता है कि विष मिलाये गये भोजन को इसमें रखा जाय तो उसका रंग बदल जाता है और वह फट जाता है। इसी तरह विषैला-पेय इसमें डाला जाय तो वह उफन जाता है। अपने दुश्मनों की चालों से बचने के उद्देश्य से पूर्वीय एशिया में, राजे-महाराजे गेंडे के सींग से बने बरतनों में भोजन और पेय लिया करते थे। अत्यंत मूल्यवान ये बरतन साधारण व्यक्ति की पहुंच से बाहर थे। अब तो ये अत्यंत दुर्लभ हैं। किन्हीं बड़े और पुराने संग्रहालयों में ही सुरक्षित रखे हुए मिल सकते हैं। सर जॉर्ज वाट के विवरण से पता चलता है कि 1893 में भी गेंडे के सींग से बने प्याले भारत में मिल जाते थे।

भूत पिशाचों को भगाने के लिए

रोगों और बुरी शक्तियों से बचने के लिए चरक के समय कुमारों को जो गेंडे—तावीज धारण कराये जाते थे उनमें गेंडे के सींग से बनाई गई मणियां भी थीं। जिंदा गेंडे के सींग की नोक इस प्रयोजन के लिए ग्रहण की जाती थी।

मणयश्च धारणीयाः कुमारस्य खड्गरुरुगवय वृषभाणां
जीवितामेव दक्षिणेभ्यो विषाणेभ्योऽग्राणि गृहीतानि स्युः।

चरक संहिता, शारीरस्थान 5; 62.

खाल और हड्डी के छोटे टुकड़े रोगों से बचने के उद्देश्य से अनेक देशों में धारण किये जाते हैं। भूत-पिशाचों को दूर रखने के लिए हड्डियों और नाखूनों के तावीज पहनाये जाते हैं। अनेक जगह यह धारणा थी कि पानी से भरे पतीले में गेंडे का सींग रात भर पड़ा रहने दिया जाय तो वह पानी विलक्षण गुणों से युक्त हो जाता है। परिवार के सदस्य तथा पड़ोसी लोग उसमें से एक चम्मच प्रतिदिन प्रसाद के रूप में पीते थे।

सुख-प्रसव के लिए

पूर्वी एशिया में एक अजीब विश्वास है कि बच्चा जनने वाली स्त्री के सिराहने के नीचे गेंडे का सींग रख दिया जाय तो वह प्रसव के कष्टों को कम कर देता है। जिन लोगों के पास यह सींग होता है वे गर्भिणी स्त्रियों को किराये पर देते हैं और प्रत्येक प्रसव के लिए लगभग 30 पौंड की राशि लेते हैं।

फ्लेअरर द्वारा तालीफ शरीफ के 1833 में किये गये अनुवाद में बताया गया है कि स्त्री के कमरे में सींग की धूनी देने से भी प्रसव सुखकर हो जाता है। यूरोप में विश्वास था कि सींग से बने प्याले में पानी रखकर पीने से मिरगी के दौरे दूर हो जाते हैं।

तालीफ शरीफ (1833) के अनुसार सींग को जलाकर मस्सों पर धूनी देना बवासीर का बहुत बढ़िया इलाज है। सींग से बने प्याले में रखा बासी जल पीना भी इस रोग में लाभदायक माना जाता है।

गेंडे की खालें चीन को निर्यात होती थीं। वहां उनसे एक जेली बनाई जाती थी जो दवा में काम आती थी।

पेशाब से चिड़ियाघर को आमदनी

गेंडे का पेशाब निःसंक्रामक माना जाता है। बरतन में भरकर मुख्य द्वार पर भूतों, पिशाचों और रोगों को भगाने के लिए टांगा जाता है। कुछ लोग तो इस पेशाब को पीते भी हैं। नेपाल

में यह दमे के इलाज के लिए बरता जाता है। कलकत्ता के अलीपुर चिड़ियाघर में पेशाब की बहुत मांग है।

जून 1982 में प्रकाशित (हिन्दुस्तान, तीन जून, 1982) एक समाचार के अनुसार पौरुष-वृद्धि के लिए लखनऊ में गेंडे के मूत्र का सेवन लोकप्रिय दवा बन गया था। लखनऊ चिड़ियाघर में यह पेशाब पांच रुपये बोतल की दर से बेचा जा रहा था। मांग इतनी बढ़ गई थी कि ग्राहकों को 'क्यू' में इंतजार करना पड़ता था।

21 मई, 1982 तक लखनऊ चिड़ियाघर में केवल एक मादा गेंडा थी, जिसका नाम मेनावती था। उसका 10 बोतल पेशाब प्रतिदिन इकट्ठा हो जाता था जिसकी बिक्री से चिड़ियाघर को 50 रुपये रोज मिल जाते थे। 22 मई को कानपुर चिड़ियाघर से हरीमन नामक एक नर गेंडा लखनऊ चिड़ियाघर में आ गया। तब 20 बोतल पेशाब हर रोज जमा होने लगा जिससे चिड़ियाघर को 100 रुपये की आय होने लगी।

चिड़ियाघर के निदेशक ने इस प्रसंग में एक दिलचस्प बात बताई थी। हरीमन और मेनावती दोनों गेंडों के भोजन का खर्च कुल 75 रुपये आता था। इनकी पेशाब की बिक्री से भोजन का खर्च निकालकर 25 रुपये प्रतिदिन चिड़ियाघर को बचत हो रही थी।

उलटियों द्वारा शरीर से दोषों को निकालने की दवा को महर्षि चरक गेंडे की लीद के रस से खिलाते थे :

.....चैवं पेया शकृदरसे ।।

चरक संहिता, कलपस्थान 4; 12



जंगली भैंसों की धरती-उदन्ती अभ्यारण्य

लेखक

राजेन्द्रप्रसाद मिश्रा*

मृत्यु के देवता यमराज के वाहन के रूप में विख्यात भैंसा किसी भी परिचय का मोहताज नहीं है। स्वतंत्र रूप से जंगलों में विचरण कर रहे जंगली भैंसों की संख्या में निरन्तर गिरावट आ रही है। जंगली भैंसा एक दुर्लभ जंगली जीव है तथा वाइल्ड लाइफ एक्ट 1972 के तहत पूर्णतया संरक्षित है। जंगली भैंसे आदि काल में पृथ्वी के कई क्षेत्रों में पाये जाते थे किन्तु आज यह सिमटकर कुछ ही देशों, अफ्रीका, भारत, इन्डोनेशिया, थाइलैंड, नेपाल में ही रह गये हैं। एशियन जंगली भैंसा भारत और नेपाल के कुछ क्षेत्रों में ही पायी जाता है। प्रख्यात जंगली जीव वैज्ञानिक के० कोरसिथ ने 1889 में लिखा था कि जंगली भैंसे भारत के कई भागों में पाये जाते थे और खासकर मध्य-भारत तो इनकी कर्मभूमि ही थी। भारत में आज यह प्रजाति असम के काजीरंगा राष्ट्रीय उद्यान एवं मानस बाघ संरक्षित पार्क में तथा म०प्र० में इन्द्रावती राष्ट्रीय उद्यान और भैरभगढ़ तथा कुटूरु अभ्यारण्य में भी पायी जाती है, जो कि अनुवांशिक रूप से पूर्णतया शुद्ध जंगली नस्ल है। जंगली भैंसों की कुछ संख्या (लगभग 40) बतौर शुद्ध जंगली नस्ल रामपुर के उदन्ती अभ्यारण्य में भी पायी जाती है।

उदन्ती अभ्यारण्य

म०प्र० के रायपुर शहर से 165 कि०मी० दक्षिण में म०प्र० और उड़ीसा राज्य की सीमा में स्थित यह अभ्यारण्य बहुत ही सुन्दर एवं मनोहारी है। इस अभ्यारण्य की स्थापना 1985 में की गयी, तथा उदन्ती नदी के नाम से इसका नाम उदन्ती अभ्यारण्य रखा गया। अभ्यारण्य का एरिया 231.44 वर्ग कि०मी० है। अभ्यारण्य मुख्यतया साल एवं मिक्स वानस्पतिक प्रजातियां से आच्छादित है। अपनी प्राकृतिक सुन्दरता एवं जैव विविधता के कारण ही अभ्यारण्य को जंगली भैंसे जैसी प्रजाति को संरक्षित करने का गौरव प्राप्त है। इसके पहाड़ी भागों में भी लगभग 4 फुट से बड़ी हरी भरी घासें पायी जाती हैं, जिसमें विभिन्न प्रकार के जंगली जीव खासकर साँभर, चीतल, कोटारी, चौसिंगा पाये जाते हैं। समतल एरिया में जंगली भैंसे झुंडों में घूमते नजर आते हैं।

उदन्ती अभ्यारण्य के जंगली भैंसों का निरीक्षण

उदन्ती अभ्यारण्य में पाये जाने वाले जंगली भैंसे काफी बड़े होते हैं और इनका वजन 700-900 कि०ग्रा० तक हो सकता है। नर भैंसों एवं मादा भैंसों में कुछ अन्तर दूर से ही समझ में आ जाता है। मादा भैंसों का रंग काले रंग के साथ साथ थोड़ा भूरापन भी लिये होता है।

* अनुसन्धानकर्ता, प० रविशंकर शुक्ला विश्वविद्यालय, रायपुर, छत्तीसगढ़।

किन्तु नर भैंसें अपेक्षाकृत ज्यादा काले रंग के होते हैं। मादा के सींगों की लम्बाई लगभग 8 फिट होती है, जबकि नर की 6 से 7 फुट के बीच होती है किन्तु नर के सींगों की मोटाई मादा से ज्यादा तथा मजबूत होती है।

वैसे तो अभ्यारण्य के लोग इनसे ज्यादा नहीं डरते किन्तु सड़क में चलते वक्त अचानक भैंसों के झुंड को देखकर मौत की याद आ जाती है। जंगली भैंसों का उदन्ती अभ्यारण्य में रहना और विकास करना, एक अनबूझी पहली बनी हुई है। गर्मी के दिनों में अभ्यारण्य के अन्दर नागेश, देवझर आगली, अभाड़ के तलाबों में ये झुंड के झुंड देखे जा सकते हैं। इनके तैरने एवं लोटने की कला देखने ही लायक होती है। जब भैंसे पानी के अन्दर पूरे शरीर को डुबो देते हैं और केवल उनकी सींगें ही बाहर दिखती हैं तो ऐसा लगता है कि मानो कोई सूखा पेड़ अपनी डालियों सहित खड़ा हो। इसके बच्चे पानी के अन्दर ज्यादा रहना पसन्द नहीं करते और वो पास ही घास चरते रहते हैं या पेड़ों की छांव में बैठे रहते हैं। ठंड के दिनों में ये कुल्थी, सरसों तथा उड़द खाने गाँव के खेतों तक भी पहुँच जाते हैं। एक बार खेत में चरने के बाद इन्हें खेतों से खेदना मुश्किल हो जाता है। इनके चरने का समय 6 बजे शाम से 8 बजे तक जंगली घास के मैदानों में तथा 9 बजे से देर रात तक खेतों में या फिर जंगल में होता है। ये ऋतु के अनुसार अपना आवास एवं स्वभाव बदलते रहते हैं। बरसात के समय ये जंगल में रहना और बड़ी बड़ी घासों पर लोटना ज्यादा पसन्द करते हैं। इनका मुख्य भोजन अभ्यारण्य की मुख्य घासों जैसे हिटोरोयोगान, थेमेडा, सैक्रम आदि है जो कि हर समय उपलब्ध रहती हैं। गर्मी के दिनों में ये साल, बीजा, कसई आदि पेड़ों के पत्ते भी खाते हैं। कभी कभी ये चरते-चरते बहुत दूर तक चले जाते हैं। स्थानीय लोगों के अनुसार ये सीतानदी अभ्यारण्य तक भी प्रवसन करते हैं। पहली बरसात के बाद मैंने इन्हें सूखी कोमल घास को खाते देखा है, शायद पानी के कारण ये घासें मुलायम एवं सौंधी हो जाती हैं।

खतरनाक स्वभाव

झुंड में रहने वाले जंगली भैंसे बहुत कम आक्रमण करते हैं किन्तु अकेला भैंसा बहुत ही खतरनाक होता है और एकाएक हमला बोल देता है। वैसे बच्चों वाली मादाएं भी ज्यादा खतरनाक होती हैं। अब तक अभ्यारण्य के अन्दर 2 लोग घायल हो चुके हैं और 3 लोग काल के गाल में समा चुके हैं, इनमें तत्कालीन एस0डी0ओ0 स्व0 श्री करवरिया साहब भी शामिल हैं।

प्रजनन

जंगली भैंसों का प्रजनन काल प्राणी विशेषज्ञों द्वारा अलग-अलग बताया गया है किन्तु अभ्यारण्य के जंगली भैंसों का प्रजनन काल अक्टूबर से फरवरी तक मैंने देखा है। प्रजनन के समय मादा पर अधिकार करने के लिए नर आपस में लड़ते हैं। इनकी यह लड़ाई बहुत ही खतरनाक होती है और भैंसें बहुत ही घायल हो जाते हैं। झुंड का सबसे ताकतवर नर ही मादा

पर अधिकार करता है। मादा का गर्भकाल लगभग 313 दिन से 330 दिन तक हो सकता है। समय आने पर मादा एक बच्चे को जन्म देती है, इस दौरान मादा भैंसे ज्यादातर समय अपने बच्चे के साथ ही बिताती है। मैंने पूरे झुंड को भी बच्चों के साथ रहते देखा है। प्रजनन काल के समय आपसी संघर्ष में पराजित भैंसा कभी कभी अकेला रहने लगता है। उदन्ती अभ्यारण्य में दो नर जंगली भैंसे अकेला रहना पसन्द करते हैं किन्तु दो बार मैंने उन्हें झुंड के साथ भी देखा है।

जंगली भैंसों की संख्या में कमी के कारण

अभ्यारण्य के वृद्ध नागरिकों से बात करने पर पता चलता है कि यहां जंगली भैंसों की संख्या पहले बहुत ज्यादा थी किन्तु इनके आवास के अपक्षरण के साथ-साथ इनकी संख्या घट रही है। वैसे मुख्य कारण निम्न हैं :

1. गाँवों का विस्तार एवं मानव जनसंख्या में वृद्धि निश्चित तौर पर इनके आवास को प्रभावित करती है। पहले यहाँ 6 गाँव थे जिसमें लगभग 425 लोग रहते थे किन्तु आज लगभग 5000 लोग अभ्यारण्य के अन्दर रह रहे हैं।
2. गाँवों के लगभग 6000 पशु जंगल में चरने जाते हैं जिससे कि ज्यादा चराई का दबाव अभ्यारण्य में बन गया है।
3. कुछ सालों पहले बहुत से भैंसे आदिवासियों के जहरीले तीर-कमान के भी शिकार हुए हैं।
4. अभ्यारण्य में गर्मी के समय में लगी आग के कारण भी इन्हें प्रवसन करना पड़ता है, फलस्वरूप बहुत से छोटे बच्चे मारे जाते हैं।
5. जंगली भैंसों के बच्चों की मृत्युदर का ज्यादा होना— कुछ बच्चे जंगली कुत्तों का तो कुछ अनेक प्रकार के रोगों का शिकार होकर मर जाते हैं, फलस्वरूप इनकी संख्या घट रही है।
6. आवास में कमी — गर्मी के दिनों में अभ्यारण्य के अन्दर 3 या 4 तालाबों में ही पानी रह जाता है बाकी तालाब सूख जाते हैं। उदन्ती नदी का जलप्रवाह भी रुक जाता है तथा पानी की कमी हो जाती है। इसके अलावा घासों भी सूख जाती हैं। और बची हुई घास में भी घरेलू जानवरों के साथ प्रतिस्पर्धा का सामना करना पड़ता है।

प्रबंध

जंगली भैंसों की संख्या में वृद्धि के लिए उनके आवास की वृद्धि करना जरूरी है। इसके लिए और तालाबों का निर्माण करके पानी का प्रबंध तथा बरसात में इनके आवास के पास घास के प्लान्टेशन लगाने जरूरी हैं। अभ्यारण्य के मध्य भाग में बसे गाँवों का विस्थापित तथा घरेलू

मवेशियों के चारण पर प्रतिबंध या एक निश्चित एरिया का चुनाव करना बहुत जरूरी है। अभ्यारण्य के लोगों में जागरुकता लाने के साथ साथ इको-विकास योजना को ईमानदारी से लागू करना जरूरी है। जंगली भैंसों के रहन सहन पर अनुसंधान करना तथा समय समय पर इनकी जनसंख्या तथा समस्याओं पर ध्यान देना भी जरूरी है।

उपसंहार

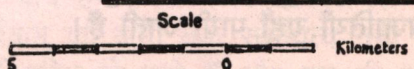
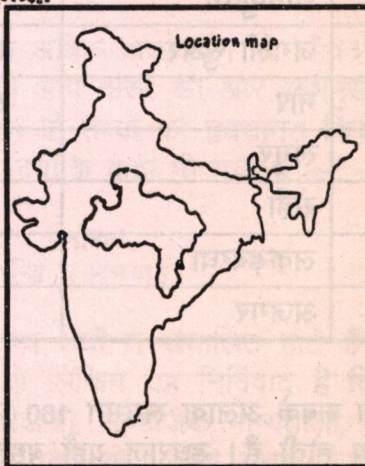
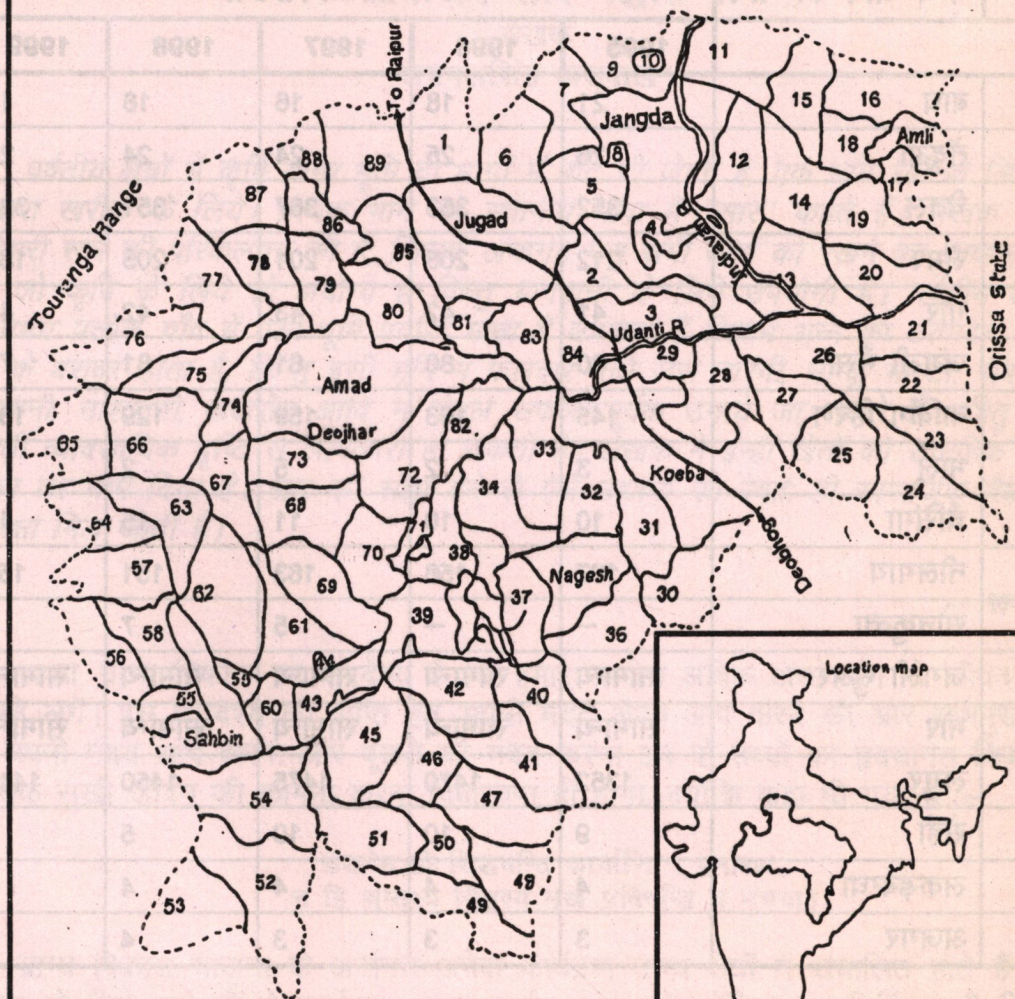
उदन्ती अभ्यारण्य निश्चित तौर पर जंगली भैंसों के लिए वरदान है किन्तु जिस तरह से इनकी संख्या में कमी हो रही है वह एक चिन्ता का विषय है। इनके प्रबंधन के लिए अभ्यारण्य को पूर्णतया जंगली भैंसा अभ्यारण्य घोषित कर इनके आवास पर समुचित ध्यान दिया जाय। उदन्ती अभ्यारण्य में पाये जाने वाले वन भैंसों पूर्णतया शुद्ध नस्ल के हैं और इनकी अनुवांशिक शुद्धता के लिए घरेलू पशुओं पर नियंत्रण जरूरी है। यदि शीघ्र ही इस ओर ध्यान नहीं दिया गया तो वह दिन दूर नहीं होगा जब भारतीय चीते की तरह ही शुद्ध भारतीय जंगली भैंसा भी लोगों की जुबान पर एक कहानी बनकर रह जाएगा।

सारणी-1 उदन्ती अभ्यारण्य में जंगली भैंसों की वर्षवार कुल संख्या

क्रमांक	वर्ष	नर	मादा	बच्चे	कुल
01	1995	30	39	11	80
02	1996	30	40	10	80
03	1997	30	40	11	81
04	1998	30	40	11	81
05	1999	29	40	10	79

सोर्स :- वन मंडलाधिकारी (वन्य जीव) आफिस रायपुर (मध्य प्रदेश)

FOREST COMPARTMENT MAP OF UDANTI WLS



1 : 125000

सारणी - 2: अभ्यारण्य में वन्य जीवों की संख्या

क्र०	वन्य जीव का नाम	वर्ष वार जनसंख्या				
		1995	1996	1997	1998	1999
01	बाघ	21	18	16	18	15
02	तेंदुआ	26	25	24	24	24
03	चैतल	352	353	367	351	339
04	सँभर	212	205	201	205	184
05	गौर	41	42	43	42	41
06	जंगली भैंसा	80	80	81	81	79
07	वार्किंग हिरण	145	163	159	129	131
08	भालू	3	2	5	2	4
09	चैसिंगा	10	10	11	15	16
10	नीलगाय	197	156	163	151	151
11	सोनकुत्ता	—	—	5	7	8
12	जंगली सुअर	सामान्य	सामान्य	सामान्य	सामान्य	सामान्य
13	मोर	सामान्य	सामान्य	सामान्य	सामान्य	सामान्य
14	लंगूर	1352	1470	1475	1450	1415
15	सेही	9	10	10	5	4
16	लकड़बग्घा	4	4	4	4	3
17	अजगर	3	3	3	4	3

इन सबके अलावा लगभग 180 पक्षियों की प्रजातियाँ भी पायी जाती हैं जो कि प्रवासी एवं स्थानीय होती हैं। डूधराज यहाँ बहुत पाये जाते हैं। साँप, गिलहरी, चूहों तथा छिपकली की बहुत सी प्रजातियाँ यहाँ पायी जाती हैं।

सोर्स - कार्यालय वनमंडलाधिकारी (वन्य जीव), रायपुर (म० प्र०)

पर्वतीय अंचल में उद्यान विकास—

बगीचे की सार पद्धति से

लेखक

जयमलसिंह असवाल*

पर्वतीय क्षेत्रों में कृषि योग्य भूमि दो भागों में बाँट दी जाती है, एक भाग रबी के लिये तथा दूसरा खरीफ के लिये। प्रत्येक भाग को स्थानीय भाषा में "सार" कहते हैं। लेखक ने एक तीसरी सार की परिकल्पना की है, जिसके अन्तर्गत उन सभी खेतों को रखने का आह्वान किया है जो कृषि के लिये तो अयोग्य है किन्तु बागवानी के लिये उपयोगी है। पर्वतीय क्षेत्रों में लगभग प्रत्येक गाँव में ऐसी भूमि पर्याप्त मात्रा में उपलब्ध है जिसमें अन्न का उत्पादन लगभग न के बराबर होता है, किन्तु इसी भूमि में फलदार पौधे जैसे नारंगी, नीम्बू, माल्टा, सेब, आड़ू, खुबानी, नाशपाती, अखरोट आदि न केवल सफलतापूर्वक उगाये जा सकते हैं अपितु इनकी खेती व्यावसायिक दृष्टि से लाभकारी हो सकती है। लेखक ने इन्हीं खेतों को सामुहिक रूप से सार का नाम दिया है। सार की संज्ञा देने से ऐसे उद्यानों को स्वतः ही सामाजिक वैधता एवं सुरक्षा मिल जाती है।

— सम्पादक

समग्र ग्राम्य विकास का उद्देश्य है कि हमारे ग्रामीण अधिक अच्छे ढंग से जीवन यापन करने लगे। इस उद्देश्य की प्राप्ति हेतु अपनी मदद अपने आप करने की ओर अभिमुख होना है अपनी मदद आप करना और दूसरों की मदद करना इन दो तथ्यों का हृदयागम किये बिना अधिक सुखी जीवन की कामना करना दिवास्वप्न ही होगा, क्योंकि कहा भी गया है :—

उद्यमेन ही सिद्ध्यन्ति कार्याणि न मनोरथः,
न हि सुप्तस्य सिंहस्य मुखे प्रविषन्ति च मृगया।

ग्राम्य विकास योजना के अन्तर्गत अनेक कार्यक्रम ग्राम्य क्षेत्रों में संचालित होते हैं। कुछ समय के लिये भले ही ये कार्यक्रम सफलतापूर्वक चल पड़े, लेकिन यह निर्विवाद है कि वही कार्यक्रम स्थायित्व प्राप्त करता है जो उस क्षेत्र के रीति-रिवाजों, सामाजिक मान्यताओं, धार्मिक विश्वासों आदि के अनुरूप होता है। इसी संदर्भ में यदि हम प्रदेश के पर्वतीय अंचल में चल रहे उद्यान कार्यक्रम को देखें तो पायेंगे कि इस कार्यक्रम को अभी तक स्थायित्व नहीं मिल सका है। पिछले 20-25 वर्षों में लाखों फलदार पौधे वितरित हो चुके हैं और यह भी सत्य है कि

* तत्कालीन खण्ड विकास अधिकारी, गैरसैण (चमोली) उत्तरांचल, वर्तमान में :— कैलासगोट ऋषिकेश, देहरादून।

प्रायः प्रत्येक परिवार ने अब तक सैकड़ों नहीं तो दस-बीस फलदार पौधे अवश्य लगाये हैं, लेकिन बगीचे खूब फलते-फूलते कम दिखाई देते हैं। गढ़वाल मंडल के किन्हीं दो विकास खंडों में वर्ष 60-61 से अब तक वितरित ऋण और उससे उद्यान लगाने वाले किसानों, लगवाये गये फल पौधों आदि का विवरण यदि मनोयोग पूर्वक देखा जावे तो उससे निराशाजनक स्थिति ही प्रकट होती है। आखिर ऐसा क्यों ? इस पर विचार करें तो पायेंगे कि आधे मन से हम फलदार पौधे रोपते गये ओर उनमें से अधिकांश सूखते गये, कुछ को हमारे अपने ही जानवरों ने चर दिया और कुछ को दूसरों के। देखभाल की उचित व्यवस्था नहीं हो सकी—जनमानस उद्वेलित नहीं हुआ—उसका मंथन नहीं किया गया, फलदार पौधे लगायें तो क्यों ? और कैसे ? केवल विकास कार्यकर्ताओं के बार-बार आग्रह, अनुनय-विनय अथवा अनुदान-ऋण के लालच से हमने फलदार पौधे लगाये। लगाये क्या नाम मात्र के लिये रोप दिये। सामूहिक हुए तो बंजर-वीरान में, गाड़-खाड़ में, बांज-बेर के बीच बिना देख-रेख, रोक-ढाक, बाड़-खोड़ के राम भरोसे और ढोल पीटते रहे गांव सभा की स्थाई आमदनी वाली सम्पत्ति के बनाये जाने की ओर फूले नहीं समाये आने वाले दिनों की कल्पना करते हुए जबकि गांव-गांव में फूल फलों के लदे पौधों की बहार होगी। व्यक्तिगत रूप से यदि हमने पौधे लगाये तो साल ब साल हम मकान के आगे-पीछे, दायें-बायें, उसी सगवाड़े और पिछवाड़े में पौधे रोपते गये। ग्राम सेवक जी अथवा और किसी के लिहाज से हमने दस-पांच फलदार पौधे जो लिए थे, लगाते भी और कहाँ ? घर का आंगन और संगवाड़ा ही सामने जो था। फिर सभी प्रयास बेकार रह हों ऐसा भी नहीं किन्तु स्पष्टतया उद्यान विकास कार्यक्रम को स्थायित्व प्राप्त नहीं हो सका है। क्योंकि इसे अभी सामाजिक मान्यता प्राप्त नहीं हो सकी है। इसे स्थानीय रीति-रिवाजों और मान्यताओं के अनुरूप नहीं ढाला जा सका है। किसी सर्वथा निर्जन स्थान पर रोपे गये पीपल और बरगद के पौधों को कोई क्यों चुरा नहीं लेता अथवा क्यों उखाड़ नहीं फेंकता ? ऐसे ही हमें प्रायः सभी मार्गों पर एक नहीं अनेक सुन्दर चबूतरों के मध्य बड़े-बड़े सुन्दर आम और जामुन के पेड़ लहलाते हुए क्यों मिलते हैं ? इसके विपरीत आज हमारे सामूहिक बाग क्यों उजाड़ हैं और दूर जाने की क्या जरूरत है, मेरे अपने ही आंगन का फलदार पौधा किसने और क्यों उखाड़ फेंका है ? इन्हीं प्रश्नों पर ही गहराई से विचार करने की आवश्यकता है।

पर्वतीय आँचल में चकबन्दी नहीं हो पाई है अतः यहां उपरांऊ (उखड़-खेती) जमीन सारों (भागों) में विभाजित होती है। एक भाग में अगर धान-झंगोरा खड़ा है तो दूसरे में मंडुवा होगा। गांव की आबादी के इर्द-गिर्द कुछ खेत घरबाड़े (सगबाड़े) के रूप में रखे जाते हैं और इसी प्रकार सिंचाई की सुविधा वाले गांव में तलाऊ (सेरों) की जमीन का भी अलग से प्रबन्ध किया जाता है। गांव की कृषि योग्य भूमि के उल्लेखानुसार चाहे दो, तीन या चार भाग हों, उनका सीमांकन परम्परागत होता है। उनके लिए कोई मुक्कमिल (प्रक्की) तार-बाड़, दीवालबंदी, बाड़-खोड़ नहीं की जाती, किन्तु सभी ग्रामवासियों-नरनारियों, बाल-वृद्धों में एक अलिखित,

किन्तु लिखित से कहीं अधिक दृढ़ और स्पष्ट समझौता होता है कि कब किस भाग में कौन सी खेती होगी और कब किस भाग में जानवर चुगने के लिए छोड़े जावेंगे और कब किस भाग में जानवरों का तो दूर आदमियों तक का भी आना-जाना बंद रहेगा। क्या मजाल किसी की बड़ा हो या छोटा, अमीर हो या गरीब जो इस व्यवस्था को भंग कर सके। “अंधेर होई गया कै निरभागी का गोरू असारी पड़ी गैना”, राह का राहगीर भी जानवरों के लिये वर्जित भाग में चले जाने पर कहेगा और उन जानवरों का स्वामी बिना किसी हील-हुज्जत के जो भी दंड उस पर लगाया जाय उसे चुकाने को हमेशा तत्पर मिलेगा। क्या यही स्थिति सामूहिक बागों या हमारे व्यक्तिगत उद्यानों की हो सकती है ?

फलदार पौधे लगाये जाने चाहिए, इससे लाभ ही लाभ है इतना तो प्रायः सभी ग्रामवासी समझने लगे हैं। इसलिए गांव की भूमि में से उपयुक्त भूमि को फलदार पौधे लगाने के लिए सुरक्षित किये जाने की आवश्यकता है और इस प्रकार चुनी हुई भूमि को एक तीसरी सार “बगीचे की सार” के रूप में मान लेना श्रेयस्कर है। इतने मात्र से उद्यान कार्यक्रम में एक क्रान्ति आ जावेगी और उसे अपेक्षित महत्व, सामाजिक मान्यता और स्थायित्व प्राप्त हो सकेगा।

इस प्रकार “बगीचे की सार” का बनाया जाना ही उद्यान विकास का मर्म जान लेना है। “बगीचे की सार” योजना में सार की सार है। यह तो लाभों की खान है। इस योजना में व्यक्तिगत योजना की सभी खूबियाँ हैं जबकि प्रयास सामूहिक योजना का है। अतः इस योजना में व्यक्तिगत एवं सामूहिक दोनों प्रकार की योजनाओं की कोई त्रुटियाँ नहीं हैं अपितु उनकी सारी खूबियाँ हैं। वास्तव में बगीचे की सार योजना में अधिक सुखी जीवन की कामना को साकार रूप देने हेतु अपने मदद आप करने और एक दूसरे की मदद करने के दोनों अपरिहार्य सिद्धान्तों का सुन्दर समन्वित रूप देखने को मिलता है।

लेखक द्वारा प्रस्तुत इस लेख से प्रभावित होकर डा० शिवानन्द नौटियाल भू०पू० उच्च शिक्षा मन्त्री ने अनेक आम सभाओं में यह व्यक्त किया कि लेखक द्वारा परिकल्पित बगीचे की सार योजना के अन्तर्गत उनके खुद के गांव, विकास खण्ड पावौ (गढ़वाल) में जो कार्य किया गया उससे वे बड़े प्रभावित हैं, क्योंकि अब वहां के ग्रामवासी फलोत्पादन का लाभकारी व्यवसाय कर रहे हैं। अतः उनके द्वारा बगीचे की सार पद्धति पर उद्यानीकरण को प्रोत्साहित करने पर बहुत बल दिया गया।

बगीचों की सार की मुख्य बातें

1. बगीचे की सार के लिए भूमि का चुनाव करते समय यह बात ध्यान में रखनी पड़ेगी कि चुनी गई अधिकांश भूमि गांव से दिखाई देती हो और गांव से अधिक दूर न हो। इन बातों से

निरन्तर देख-रेख में बड़ी सहूलियत होगी। अपने मकान की तिबारी या आंगन में बैठा हुआ वृद्ध भी अपने तथा अपने ग्रामवासियों के फलों से लदे पौधों की देखरेख करते हुए मन ही मन हर्षित भी होता रहेगा। गांव भर की नजर के सामने होने से अनायास ही देख-भाल होती रहेगी।

2. जिस प्रकार घरबाड़ा (सगबाड़ा) या तलाऊँ (सेरा) साल में बारहों मास काश्त में रहता है और वहां पशु चुगाने के लिए नहीं छोड़े जाते हैं उसी प्रकार बगीचे की सार वाली भूमि भी हमेशा बंद रहेगी याने वहां पशु नहीं चुगाये जाने हैं। इसी मात्र एक निर्णय पर ग्रामवासियों को सहमत होना है और यही एक निर्णय इस योजना की सफलता की कुंजी है। गांव के कुछ खेत हमेशा बंद रहेंगे (असारी) इससे गांव में किसी को भी क्या हानि हो सकती है ?

3. बगीचे की सार के लिए चुनी गई भूमि में ही फलदार पौधे साल-ब-साल लगाने चाहियें लेकिन गांव के जितने परिवारों के खेत उस सार के अन्दर हों उन सभी को फलदार पौधे लगाने के लिए बाध्य नहीं किया जाना है। केवल गांव की ही भूमि का वर्गीकरण दो सारों (भागों) के बजाय तीन सारों में होना है। इस बगीचे की सार वाली भूमि में जो चाहे फलदार पौधे लगाये, जो चाहे पूर्ववत् धान, झंगोरा, गेहूं, जौ आदि फसलें लेता रहे। वैसे सहज ही आशा की जाती है कि कालान्तर में सभी फलदार पौधे स्वयमेव लगावेंगे।

4. मात्र गांव की कुछ भूमि को बगीचे की सार के रूप में मान लेने से उस में पशुओं का चरान वर्जित करने के सारे ग्रामीण समुदाय द्वारा इस कार्य को मान्यता मिल जाती है उससे घेरवाड़ की समस्या शतप्रतिशत नहीं तो अधिकांश हल हो जाती है। अपने-अपने खेतों के किनारों को बन्द करते हुए हम अपनी मदद आप करने के व्रत का पालन करते हैं और चूंकि बगीचे की सार में गांव के अनेक परिवारों की भूमि सम्मिलित होती है इसलिए वे सभी एक दूसरे की मदद करने के मार्ग पर अग्रसर होते हुए अधिक सुखी जीवन की कल्पना को मूर्त प्रदान करते हैं।

5. वास्तव में बगीचे की सार का निर्धारण एक संकल्प के रूप में किया जाना है और जहां संकल्प है, एकता है, सहयोग है, वहां हर कार्य सम्भव है तथा फलीभूत है।

6. इसी परिपेक्ष्य में विकास क्षेत्र पावों जिला गढ़वाल में बगीचे की सार योजना को कार्यान्वित किया गया है और विकास क्षेत्र पाबों में इस योजना के कार्यान्वित किये जाने की दिशा में वर्ष 66 से 68 के बीच जो कार्य हुआ है उसका विवरण नीचे प्रस्तुत है :

बगीचे की सार वाले ग्रामों के नाम	योजना में सम्मिलित परिवारों की संख्या	लगाये गये फलदार पौधों की संख्या	जीवित पौधों की संख्या	उद्यानों का क्षेत्रफल (एकड़ में)	बगीचे की सार के लिए निर्दिष्ट क्षेत्रफल (एकड़ में)
1	2	3	4	5	6
01- देबकोट	4	358	231	3	5
02- सैजी	5	705	560	7	15
03- नौठा	4	455	412	4	15
04- चौड़िख	4	487	400	5	10
05- पटौटी	8	200	150	2	4
06- मातौली	6	850	610	8	15
07- चमगांव	8	660	460	6	10
08- उदालख	6	310	215	5	6
09- सिवाल	6	520	840	5	10
10- नौगड़	8	710	606	7	10
11- जबरौली	4	300	250	3	05
12- झंगरबो	3	300	276	3	14

7. जो बगीचे की सार का कार्य विकास खंड पाबों (गढ़वाल) में वर्ष 66-68 के बीच किया गया वह फलदायी रहा। सचमुच पौधे फल दे रहे हैं और कोई भी भरसार सरकारी उद्यान की ओर जाने वाला राहगीर मोटर मार्ग चिपलघाट-भरसार के दोनों ओर इसकी बानगी देख सकता है। (आचार्य, प्रसार प्रशिक्षण केन्द्र पौड़ी ने तो इन उद्यानों पर एक सुन्दर सचित्र लेख प्रकाशित भी करवाया है) और भली भांति देख सुन सकता है कि किसानों का फलों से अच्छी आमदनी होने लगी है। लेकिन दुर्भाग्य है कि सेव के पेड़ों पर लग रही बीमारी का सफल उपचार और उनकी समुचित देख-रेख में उदासीनता भी दिखाई देती है। कौन दोषी है ? इसमें जाने की आवश्यकता नहीं अपितु समझदारी इसी में है कि विचार करें कि ऐसा क्यों हो रहा है और इसका निदान क्या है ?

सार संक्षेप

बगीचे की सार पद्धति का विचार विकास खंड पाबों में वर्ष 66-67 में उपजा और इसे कार्यरूप दिया लेखक खंड विकास अधिकारी ने और उनके साथी सहयोगी सोविओ और ग्राम सेवकों ने, जिनमें से सर्वश्री भूपसिंह रावत और नवल किशोर बहुगुणा, सहायक विकास अधिकारी (कृषि) और सर्वश्री रघुवीर कनवासी, सूरवीर सिंह रावत, अनसूया प्रसाद नैथाणी ग्राम सेवकों का सर्वाधिक योगदान रहा। विकास खंड पाबों (गढ़वाल) में यह कार्य बढ़ता गया और इसकी उपयोगिता से प्रभावित होकर विगत 3-4 वर्षों से उद्यान विभाग द्वारा बगीचे की सार पद्धति से फलदार पौधों को लगवाये जाने पर जोर दिया जा रहा है और पर्वतीय क्षेत्र विकास परियोजना के अन्तर्गत कुछ उद्यान इसी पद्धति से विकास खंड कोट, खिर्सू और पौड़ी में और अन्यत्र भी लगवाये गये हैं लेकिन फिर भी पद्धति के मर्म "सार" को अधिक से अधिक समझते बूझते चलते रहना श्रेयस्कर होगा।

भारत, जर्मन कृषि अभिकरण, जिसके द्वारा जिला अल्मोड़ा में ग्राम्य विकास कार्यक्रम विगत 7-8 वर्ष तक संचालित किया गया, ने अपने वर्ष 78-79 के कैलेंडर के मुख-पृष्ठ पर उद्बोधन छापा है :-

उद्यानों की बनाओ सार, यहीं है समय की पुकार।

उद्बोधन चुटीला और सामयिक है लेकिन नव-निर्माण और विकास सबके परिश्रम एवं सहयोग से ही सम्भव होता है। जनजागरण एवं जनसहयोग के लिए हर स्तर पर कुछ प्रबुद्ध लोगों को पहल करनी होगी और पुनः दोहराना चाहिये कि सार के सार को समझना होगा।

दृष्टव्य

यह लेख "चमोली विकास" पत्रिका के माह अक्टूबर 1980 के अंक में छपा। यह उल्लेखनीय है कि "बगीचे की सार" योजना की परिकल्पना और सफल क्रियान्वयन से प्रभावित होकर वर्ष 1966 से 1980-81 तक प्रत्येक वर्ष उद्यान ऋण आवंटन सम्बन्धी शासनादेशों में बार-बार "बगीचे की सार" पद्धति से उद्यान लगवाने के आदेश प्रसारित होते रहे किन्तु वास्तविक कार्य सम्पादन में रुचि लेने की कोई विधा नहीं होने के कारण "बगीचे की सार" योजना एक भूली-बिसरी कहानी मात्र रह गई।

पर्वतीय क्षेत्रों में सार योजना से ही सफल फलोद्यान सम्भव

पौड़ी-टाइम्स दि. 23-4-1979 से सामार

गोपेश्वर- उच्च शिक्षा मंत्री डा० शिवानन्द नौटियाल ने गैरसैण क्षेत्र में विशाल जनसमूह को सम्बोधित करते हुए कहा कि पर्वतीय क्षेत्रों में सार योजना के आधार पर ही फलोद्यान

सफल हो सकता है। आपने पाबो विकास क्षेत्र का जिक्र करते हुए कहा कि वर्ष 1966-67 में श्री जयमल सिंह असवाल क्षेत्र विकास अधिकारी थे, जो आज गैरसैण विकास क्षेत्र में हैं, ने यह योजना प्रारम्भ की थी जो अत्यन्त सफल रही है। शिक्षा मंत्री जी ने कहा कि हमें मात्र डिग्री कालेज की मांग नहीं करनी चाहिए। हमें यह देखना होगा कि हमारी भावी पीढ़ी कैसे स्वावलम्बी हो सकती है। आपने कहा कि कई स्थानों पर हमारे पास ऐसी भूमि है जिस में हम साग भाजी बहुत तायदाद में पैदा कर सकते हैं जिसे बेच कर हम अपनी आर्थिक दशा सुधार सकते हैं। हम आज भी इस मामले में दूसरों का मुंह ताकते रहते हैं। आपने कहा आपकी समस्यायें मेरी समस्यायें हैं, मैं उन्हें दूर करने का भरसक प्रयास करूंगा।



Preservation and Welfare of Wild Life in India

By
S.K. Roy

(Reproduced from 'Cheetal', Vol. 20, No.1 (Sept., 1978.)

Pressure of population on the wildlife habitat is so overwhelming that despite many constructive developments in recent years the future welfare of wildlife seems rather grim. Yet in this as in so many other spheres the contradictions on the Indian scene hold out some hope of success. India's rural population— about 500 million strong, has, with few exceptions a remarkable ability to relate to nature and to wildlife. There are many groups who are not only vegetarian, but actively eschew all killing. At one Jain shrine perched on a high, heavily forested hill, the priests and acolytes periodically drive away animals rather than harm them. In forest areas, the locals learn to co-exist easily with all carnivora, except those which with wounds or old age have turned into man-eaters.

This is very much part of the Indian ethos at the grass roots level, going back to earliest times. An awareness of the oneness of man and nature is recorded in the very first writings of the race. A movingly beautiful description of the creation of woman in a mythological tale probably contemporary with Vedic verses composed about 3500 years ago goes as follows:

'The great Artificer took the rotundity of the moon, and the curves of creepers, and the clinging of tendrils, and the trembling of grass, and the slenderness of the reed, and the bloom of flowers, and the lightness of leaves, and the tapering of the elephant's trunk, and the glances of deer, and the clustering of rows of bees, and the joyous gaiety of sunbeams and the weeping of clouds, and the fickleness of the winds, and the timidity of the hare, and the vanity of the peacock, and the softness of the parrot's bosom, and the hardness of adamant, and the sweetness of honey, and the cruelty of the tiger, and the warm glow of fire and the coldness of snow, and the chattering of jays, and the cooing of the cuckoo, and the hypocrisy of the crane, and the fidelity of the Brahmany duck, and compounding all these together, he made woman, and gave her to man.'

An incident in the Sariska game sanctuary near Alwar, just south of Delhi, charmingly illustrates the relationship between man and nature. A few years ago game viewing just after first light, a friend and I saw a tiger loping slowly down the side of the main road through the sanctuary. We followed it for about half a mile, stopping only because much further down the road on the same side as the tiger there were two milkmen on bicycles on the way to market with their cans of morning milk. They were coming towards the tiger; and we feared for them. As the tiger ambled on, the milkmen got off their cycles and quietly crossed the road to give the tiger ample room to pass. After it had gone on a little way and then disappeared off into the jungle, the cyclists remounted and moved on towards us. Out of an overwhelming curiosity, we stopped them to ask why they hadn't been afraid— as they seemed so totally unworried. One promptly said "Oh no sir. That tiger was in deep thought."

The depredations since Moghul times from the hunting by the rulers, first Indian then British, makes it difficult to conceive that barely two hundred years ago the Indian lion and the great Indian rhinoceros once spread all over the country. But at Independence in 1947, tigers and leopards and a wide variety of mammals and birds were still so vastly numerous that we in India tended to take the natural abundance of our wildlife for granted, and overlooked the consequences of the atavistic ardour of the sportsman, the pot hunters, and the poachers. In the middle fifties there were still herds of black buck more than a thousand strong. Numerous tigers and other big game species still roamed more or less freely in large areas of protected forest all over the land. By the sixties the deer herds had disappeared, the cheeta was extinct, and the tiger and many other species already endangered.

The plight of the wild was the result of the dramatic changes taking place in the countryside. The agricultural revolution resulted in the clearing of hitherto neglected areas earlier not considered cultivable. Forests declined before the demands of the burgeoning population. The sub Himalayan region previously protected by the malaria mosquito became fit for human habitation— people and prosperous farms displaced the animals. Cultivators tilled their lands gun in hand for protection against tigers and elephants, and to augment food supplies.

The voices of a few dedicated conservationists finally began to be heard over the fusillade from miscellaneous firearms, and in 1952 the Indian Board for Wildlife was set up by the union government to co-ordinate wildlife preservation at the national level. Institutional non-governmental involvement was limited to the Bombay Natural History society, with Inspiring support from Dr. Salim Ali the world-renowned ornithologist and author. The obvious need for a conservation-oriented organisation resulted in the emergence in 1956 of the Wildlife Preservation Society of India which despite financial limitations produces a quarterly wildlife journal "Cheetal", thanks to the selfless efforts of its Honorary Secretary Dr. Misra.

More recently the World Wildlife Fund through Prince Bernhard and a group of wealthy influential Indians established W.W.F. India. The international organisation after an impressive global fund- raising programme to save the tiger donated US \$ 1,000,000 for "Project Tiger" in India, which with substantial additional Government funds is being used to establish eleven key sanctuaries to regenerate the species.

Much excellent work has been done, and there are reports about increase in the number of tigers, but it is still too early to say whether this can effectively counter the continued decrease of some two-thirds of the tigers now outside the sanctuaries, or whether in the years to come tigers will be limited to a few specially protected areas as is the Indian lion and the great one-horned rhinoceros. The central and state governments are certainly making a major concerted effort but these organisational measures depend for real success on public participation, which is still a long way from being achieved. Fortunately there is much greater public awareness. Air India, always in the van of progress, gives interesting proof of this. It has most imaginatively constituted an ecology committee.

The crisis of Indian wildlife reflects a global trend. It is readily understandable in India as there is apparently an intrinsic conflict of interest between the needs of our steadily increasing population, with vociferous demands, and votes to back them, and the voiceless, voteless animals of the wild. Many international experts consider there is little we can do to halt this tragic trend. The distinguished ecologist-naturalist S. Dillon Ripley, Secretary

of the Smithsonian Institution says: "What those of us interested in conservation are virtually sure of is that many of the species of plants and animals, finely tuned to their surroundings, especially in the tropics, will vanish from the scene long before we have managed to create ways to stabilise the juggernaut of humanity." His acknowledged expertise and lifetime field interest in South Asian fauna and flora make his view authoritative.

With limited credentials for doing so, I venture to suggest that in India despite our overwhelming problems, we can do better if only we can build a proper bridge of understanding between our rural population and the urban conservation authorities. As a passionate conservationist, with more than a little contact with our people at the field level, I think we can build on measures taken independently, by local villagers without any official encouragement, to protect all species in the vicinity of their villages— creating multiple mini sanctuaries. Modern conservation methods with an organised system of careful restocking of badly depleted areas has worked elsewhere, and can certainly be repeated in our country. It is no coincidence that the earliest recorded official ordinance on conservation was probably the Emperor Ashoka's pillar edict about 300 B.C., requiring protection of certain animals including the rhinoceros, and preservation of our forests.

Much has happened to our peoples and our land over the centuries but the doctrine of "ahimsa" (non-violence) is still very real for the majority of our people. Its application in a unique, long-drawn-out, bitter fight for freedom by Mahatma Gandhi has made it part of our contemporary life. I refuse to believe that in our ancient land, the land of the Buddha, the Jain saints, and of Gandhiji, our people will deny to the birds and animals and plants and fishes of our forests and plains, and from our skies and our rivers, a reasonable right to co-existence.

Jarawa Tribes of Andaman– A Report

By
Nidhi Chauhan*

Abstract

The restless Ten-Degree Channel separates the Andamans in the North and the Nicobars in the south and marks turbulent water-divide between the two distinct groups of primitive tribes– the Negritos and the Mongoloids, living in these islands. The habitat of the Jarawas and the Jarawas themselves, belonging to the former of the two groups, are under a great threat from rising pressures from Homo sapiens, the so called civilised humans. This rising threat had necessitated the need to study the habitat of Jarawas and their problems. For the critical analysis and determination of the spatial extents of the habitat, Remote Sensing was applied. IRS IC LISS III (FCC) was used for this purpose. To peep into the second part of the problem ground observation, field data and verbal interactions held with tribal people as well as local inhabitants were taken into consideration. The preliminary results obtained in this study reveal that the resources of tribal people are under great stress and might one day become detrimental to the very existence of the tribal people. Further, the loss to the genetic pool of the tribe might be non-retrievable and might lead to the extinction of the tribe as has already happened in the case of several others.

Introduction

The Jarawa are basically Erem-taga or forest-dwellers. Early accounts of the Jarawas indicate that on Rutland Islands a small tribe existed whom the Andamanese called Jarawas or "Jangil". The word Jarawas is not the name of a tribe. It is simply the Bea, the Andamanese word for a stranger. The aborigines in the Andamans from the beginning and up to the end of the 19th century consisted of twelve tribes who have been classified on the basis of differences in respect of language, social customs and the types of weapons generally used by them. Besides, the Yerewa group and the Bojigngij group the third group consists of the two tribes, the Onges and the Jarawas. After the establishment of the Penal Settlement in the Andamans by the British in 1858, it was firstly the Great Andamanese and then the Onges who came in

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close friendly touch with civilization, destined to perish within the span of about a century and half at the end of which 32 Andamanese and 96 Onges (according to the 1991 census) are just counting down their days to vanish from this earth.

The Habitat

Chandi (1999) has discussed the territorial range of the Jarawa people up to the year 1858 and thereafter in detail. Their original range extended from the South in Rutland Island, around Port Blair area and North Island into the western side of South Andaman Island. However, the Jarawa people were finally marginalised on two occasions. Marginalisation mainly occurred to accommodate people already settled in the Andaman Islands and the new settlers. The reserved area starts from the south at Constance Bay along Mt. Cholunga range towards and along Mt. Cadell range up to Middle Strait (Figure 1). Preliminary ecological survey and assessment results indicate that the wetland ecosystems and associated habitats in the Reserve are one among the most pristine and diverse. These include the last remaining extensive habitats for the endangered Andaman teal and other wetland birds. Some of the creeks support the best viable populations of crocodiles and their best nesting habitats (Andrews, H.V. 1999). The Jarawa habitat comprises mainly of Evergreen forest, Semi-evergreen forest, Moist Mixed Deciduous forest and Mangroves towards the eastern coastal side, demarcated as Jarawa Reserve Forest area (Plate2). Some of the commercial and non-commercial timber species of the Andaman found in the Reserve Forest Area are: *Sagearea elliptica*, *Diospyros marmorata*, *Pterocarpus dalbergioides*, *Murraya exotica*, *Terminalia bialata*, *Terminalia manii*, *Chukrasia tabularis*, *Mesua ferrea*, *Dipterocarpus* spp, *Madhuca butyracea*, *Mangifera andamanica*, *Albizia lebbeck*, *Duabanga grandiflora*, *Lannea coromandelica*, *Prunus martabanica*, *Manilkara littoralis*, *Artocarpus chaplasha*, *Hopea odorata*, *Ailanthus kurzii*, *Endospermum chinense*, *Pterygota alata*, *Sideroxylum badruna*, *Pterocymbium tinctorium*, *Canarium euphyllum*, *Spondias pinnata*, *Bracantomalum mangifera*, *Myristica* spp., *Baccauria sapida*, *Pongamia pinnata*, *Dillenia* sp, *Pometa pinnata*. The shrub spp., include *Calamus andamanicus*, *Calamus palustris*, *Calamus longisetus*, *Korthalsia laciniosa*, *Caryota mitis*, *Licuala peltata*, *Areca triandra*, *Calamus viminalis*. And the herbs include *Leea indica*, *Wedelia biflora*, *Scleria* spp. *Cyrtococcum trigonum*, *Oplismenus compositus*.

The Jarawa habitat was perhaps worst affected by the construction of the 343 km long Andaman Trunk Road connecting Chidia Tapu, with Diglipur, a part of the road passing through Jarawa forest areas. Rain forest was clearly felled, heavy machinery and high degree blasters deployed for the construction work. Labourers were allowed to build temporary huts, which became a permanent settlement built out of forest resources resulting in depletion of food resources on which Jarawas depended for survival. The encroachers of the land belonging to the Jarawas were thus rewarded by the Administration's decision to legalize the occupancy. The Jarawas, obviously, could not go to court to defend their rights. Then, there was the problem of the trespass by the outsiders into the Jarawa areas. The restlessness of Jarawas and their mode of protest against outsiders, rather than any organised form of struggle for the retrieval of their original forestland from the civilised people, thus continue.

Towards the Constance Bay all the creeks are highly disturbed creek system with agriculture extending up to the fresh water streams and plantations on hill slopes, causing large scale silting of creeks, marshes and the bay. Shoal Bay Creek is a long stretch with pristine mangrove habitat and is under pressure. Towards the Western coast of Jarawa Reserve Forest tree felling, poaching of the Andaman wild pig (*Suscrofa andamanesis*) spotted deer/cheetal (*Axis axis*) and intensive fishing has been observed. It is known that the Jarawa people use the northern edge of an extensive marsh area within the Reserve as campsites and probably use the marsh for hunting fish and collection of shellfish. Some of the settlers use the same marsh on the eastern and southern sides mainly for catching freshwater fish and trapping teals, which includes the endangered endemic Andaman teal (*Anas gibberifrons*). Myanmar poachers too use this area for illegal timber extraction and as a hideout. Settlements, their plantations and converted forests without a buffer zone surround the southeastern boundary of the Jarawa reserve. The settlements Tirur, Temple Myo, Tusonabad, Orabaraji, Cadell Ganj and others are clustered settlements. Northern most settlement is Ferrargung. The other settlements along the eastern boundary are Mile Tilek and Jirkatang. Areas of Tirur, Temple Myo extend right into the Jarawa buffer area. It is observed that Jarawa forest resources are still under pressure. These include forest produce such as bamboo, cane, medicinal plants, poles and timber for construction. It is also observed that foreign and Indian nationals passing through the Jarawa Reserve areas disturb these tribal

people for photography and in turn offer them some eatables. With the result lot of Jarawas are suffering from ailments. Though several restrictions have been made, as the Reserve Area is bounded on two sides by Police check posts, Jirkatang and Middle Street towards the Nilambur *jetty*. But still small pits and falls are severely injuring the Jarawa habitat. Analysis and assessment of the present scenario forces us to introduce the concept of core and buffer areas as a major suggestive and curative method (Table 1).

Methodology

Survey and assessments were conducted along the upper western coast by sea, the eastern and southern boundaries by road. A rapid Socio-economic study and interviews with local people settled along the eastern and southern area of the boundary was conducted during the study period. The inventory generated helped us to predict the future trends of habitat and the tribe as well. During the field visit to Andaman Island in the second week of December 2000, ground truthing was carried out which led to the stratification of the Jarawa reserved forest. IRS IC LISS III False Colour Composites (FCC) were used for the detailed study. Apart from this, Survey of India topographic maps were used. The study area lies within $11^{\circ}37' - 12^{\circ}15'N$ and $92^{\circ}30' - 92^{\circ}50'E$. The area shown in the (Plate 1) is the extracted portion of the satellite hard copy data on 1:2,50,000. The IRS 1C LISS III data have been visually studied to understand the habitat set-up of the area. The satellite imageries were taken to the study area and reconnaissance survey was made to correlate the image characteristics and ground features. The final map was prepared using visual interpretation of FCC on the basis of image recognition elements (shape, size, tone, texture, association, etc.). Area of interest comprising approximately 750 Km^2 was extracted from full scene on 1: 2, 50,000. Arc View 3.1 software was used for GIS based analysis. Erdas Imagine 8.3.4 software was used for geo-referencing and mosaicing of satellite scenes. It was estimated that 401.9 and 168.36 Km^2 area could form the core and buffer area for the Jarawa, respectively. Suitable colour hatches were assigned to different classes and the final classified map was prepared.

This study has been carried out as a part of an ongoing Jai Vigyan Project in Andaman Islands sponsored by Department of Space and Department of Biotechnology, Government of India. While the team was working in the field

to collect ground truth, it was observed that Jarawa Reserved Forest Area could be delineated and mapped using remote sensing and GIS. Moreover, it is realised that the potential of remote sensing could be tapped with regard to change of Habitat boundaries. Enough evidences are available regarding the shrinkage of habitat during the past few decades. (Plate 1)

Tribe in Distress

The experience of the British with the Andamanese and the Andaman Home in the last century seems to have failed to teach any lesson to our policy-makers. In their eagerness to civilize the Andamanese, the British opened up for the aborigines the surest path to extinction. The Onges, similarly, are also heading on their way to elimination from this earth. "Years of intercourse with the Andamanese have taught us that civilization can give them nothing to compensate for the life in their own jungle, and however kindly and well treated they may be, they are always ready to leave the settlement with its comforts for the wild jungle life, its sport, food and amusement. If we are asked why the Andamanese have not been more civilized, the answer is: Civilization cannot be forced on a race; a want must be created before it can be gratified, and to attempt, as at one time it was, to force a nomadic hunting race to become agriculturist-when the labour of agriculture- is irksome, takes away the people from the pursuits they like and does not supply any want that they feel is both absurd and impolitic, as it is liable to estrange them when their friendship is for many reasons important." (Roy and Choudhury, 2000). These ancient people inhabiting these remote secluded islands since long past could never know that a day will come when the possession of their own homeland will be threatened by civilized outsiders who would squeeze them into a small forest area and ultimately push them to extinction. Years passed into centuries and the life of these wild people passed on and on till history took a sudden turn. An epidemic of measles broke out in March 1877. The convicts brought this disease from the mainland and passed it on to the aborigines in general. The disease spread rapidly and within two or three years half the original inhabitants and almost the entire population, except the Jarawas, died of measles. Thus malaria, syphilis and measles which were the contributions from civilisation stood out as the instrument of the impending destruction of nearly the whole race of aborigines. The epidemics of mumps in August 1886 and that of influenza

hastened the work of obliteration in April 1890. To add to the list another ugly disease, gonorrhoea also appeared in the Andaman Home in July 1892.

Conclusion

The Survey and analysis in GIS domain of Jarawa Reserve clearly confirms the past and constant pressure on the Jarawa people and their resources. As is evident from the buffer zones presence of Andaman Trunk road and associated roads near settlements are posing a serious threat. On the contrary, there is an urgent need to look into the welfare requirements of the settlers around the Reserve. In spite of thinking in terms of shifting or rehabilitating the Jarawas it is recommended to shift villagers, leaving behind some important Government offices committed towards the welfare of the Tribe. This is because shifting of Jarawas from the habitation means a knock at the door of Jarawa extinction. On several occasions, whenever there was an effort to civilise Jarawas by bringing them into the mainstream civilization the Jarawa health deteriorated ending their life in a very short span. May be because Jarawa is a biological entity in itself, like any other organism on this planet, which find it difficult to survive in a habitation unknown to itself. Frequent deaths occurring through conflicts with poachers must also be taking a toll on their population. Evidences suggest for the reason why the Jarawa people are coming out. Fear of resource crunch in future and the quest to interact with civilised human are among the important ones. Strict territorial laws should be enforced to keep the outsiders and poachers away from the reserve. This would greatly help the Forest Department to maintain the habitat in its present form, thereby, preventing its further deterioration.

The Jarawas who were roughly estimated to number around 600 at the time of establishment of the Penal Settlement, are now estimated to have declined to about 200 (within 150 years) (Table 2). Free interaction of the Jarawas with the outsiders can pose a disaster. It exposes them to various diseases and pollution hitherto unknown to them in their jungle habitat. The fate of the Jarawas, who have started coming out of their shells from the protection of the forest, is not hard to foretell. What the Government can ultimately do for them may be rehabilitate them, like the Andamanese and the Onges, in some colony specially set up for them under Government care and feed them till the last Jarawa will have ceased to walk on this earth. Since no

serious or well thought steps have been taken for the last 50 years, slowly and gradually the tribe is marching towards extinction.

Table 1

B U F F E R Z O N E	Road Buffer (in mts.)	Area (in sq. km.)	LIST OF SUGGESTIONS
			LIMITS OF INTERFERENCE
	0-500	168.36	□ Vehicular traffic should be drastically reduced. □ Water driven means of transport should be encouraged. □ Raw material of any kind in any form shouldn't be provided to Tribes. □ Police patrolling down the Andaman Trunk Road (An. T.Rd.) should be made more regular. □ Stopping of vehicles without a genuine cause should be made punishable. □ Settlements close to the buffer areas should be shifted. □ Cattle grazing around buffer area should be strictly prohibited. □ Naval Forces should be deployed to guard coastal boundaries.
	500-1000		
C O R E Z O N E	Beyond - 1000	401.9	□ Judicious visits of personnel from Police, Medical & Research Deptt. should be allowed. □ Team of ecologists should be deputed to develop a habitat suitability plan and building corridors. □ Experts from Medicine, Anthropology, Sociobiology and Ecology should work out a methodology, which could promote the growth of their population.

Table 2

Vanishing Tribe	1858	1901	1911	1921	1931	1941	1951	1961	1971	1981	1991	March 1999
Jarawa	600	468	114	114	70	–	50	500	NE	31	200	200

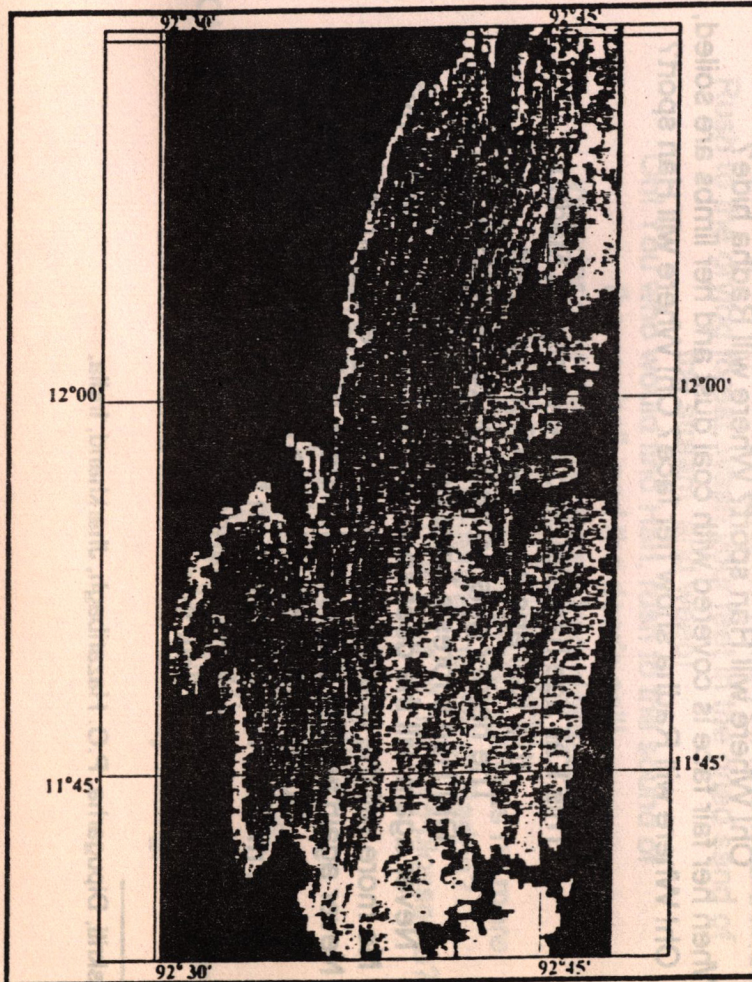


Plate 1: False Colour Composite of a part from South Andaman Island.

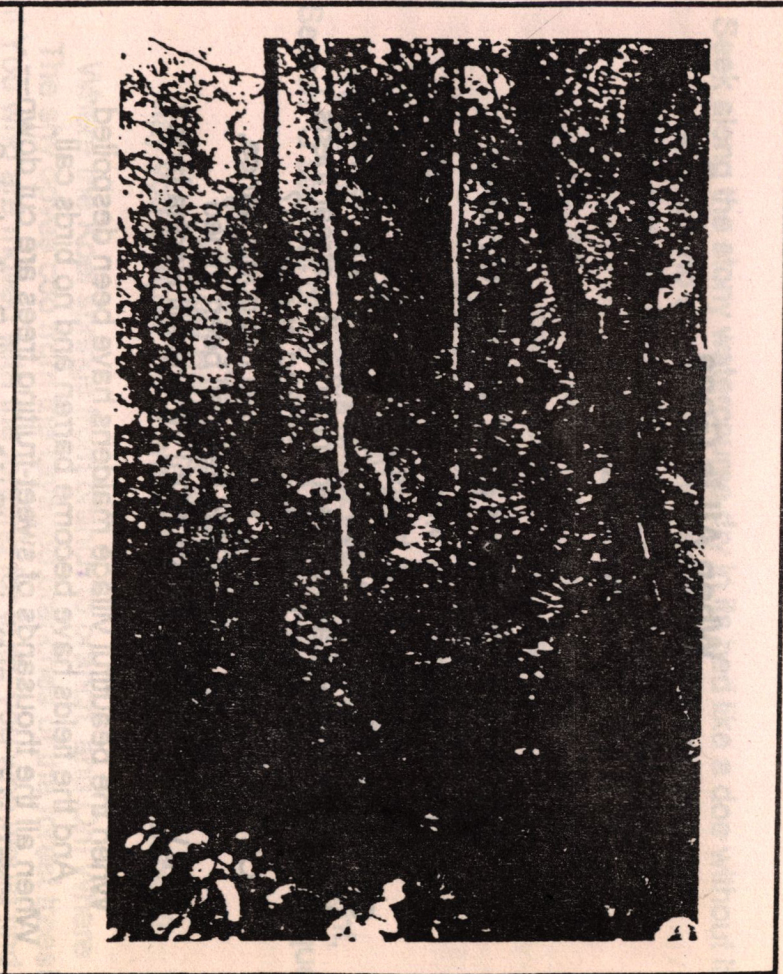


Plate 2: A close View of the Jarawa Tribe Habitat in the South Andaman Island.

When All is Gone

By
Bulu Imam*

(Oh ! Where, when all is gone, are you, O Hari?)

We have forgotten Hari when we destroy the forests;
Where will the bashful Radha hide?

Oh! Where will the dove lay its eggs, cooing with her love?
When the stones have all been mined in the streambeds,
And the rivers have been choked and dried?

Oh! Where will Hari play, where will the gopis dance,
When the green fields have all been mined

Oh! Where will Hari dance? Oh! Where will Radha hide?

When the beautiful village maidens have been despoiled,
And the fields have become barren and no birds call,
When all the thousands of sweet-fruited trees are cut down---

Oh! Where will Hari sport? Where will Radha hide?

When her fair face is covered with coal dust and her limbs are soiled,
Oh! Where will Radha show her face? Oh! Where will Hari sport?

This Kali age has attacked the energy of Madhu,
this Kali age has despoiled his forest.

The herder girls no more go to the forests,

Oh! Hari's forests have been destroyed. Mourn!

Never again will the deer sport on the banks of the limpid river.
No more will the bright moonlight tear the green garment of trees!
Never again will the shadowy darkness of the silken forested night
Quiver with the night-song of mountain birds.

Oh moan! All is destroyed on the banks of the forest river.

Those who seek Hari wander through the burned forest,
follow through the ashy night.

Seek along the stony watercourse dry in its bed like a doe without life:

Go you who would hear the sad dirge of a deceitful fate,
Follow through the night, listening to the sound of machines,
for the footfall of Hari!

O go, you deceitful forester, follow through the night,
looking for the forlorn Radha!

O go, all of you who love and yearn for the beloved,
find the ash of the burned forest!

Listen! O listen for the flute of Hari!

While the death-thrones of the forest rattles through the night,
Search! O seekers of the true and beautiful, may Hari bless your quest!

Through the jangle of machines and
the smoke-coughing engines and mine-fires,
Oh! May Hari give strength to your quest!

May you glimpse the grove where Radha conceals herself!

Where the Koel springs from branch to branch, and Oh! Where
The shy doves coo from the ravaged branches of the forest trees!
Oh! You who are moved with the longing for truth; you who would find Hari,
Rush to the drying forest, wash your feet in the dried sand of
the stream, and weep!

Oh! You who would find Hari, rush to the sound of
the cowbell, and the deer's call!

Wander over the hills spared from destruction!

The passing of Hari's playground!

Mourn! O ye who seek! Radha's green sylvan grove is no more.

Where is the lac tree for reddening the feet of Radha?

Where is the blue pond where the pink lotus of her love blossoms?

As Hari's heart burned with fire of longing,
so a new fire rages in the night of Brindaban!

The mine fires rush into the heart of Hari's forest,
and burn it down heedlessly!

Oh! You who would find Brindaban, rush into the forest, seek endlessly!

On a barren branch a dove will be forlornly calling;

That is Radha! The axeman's tap, and the rattle of machines.
Oh! You who would find destruction! Here they are removing Hari's forest.

The foam-flecks of the river-surface
which were Hari's strings of pearls, gone for ever!

Where was once only dancing and laughter, Mourn! Oh! You who seek!
Mourn! For the feet of the dancers have been taken away.
The soft dust of the village paths, wherein the lotus feet of Radha left imprints,
Are gone! Lost are they in endless eddies
of swirling dust where gopis danced!

Mourn! For the green forest and blue grove are gone!

And the pearl-flecked river mined!

Only in this song, and in the song of Jayadeva its memory remains!

Oh! Mourn.

Oh! You who mourn and seek! Where is bashful Radha gone now?

Oh! You who mourn and seek! Where is sporting Hari gone now?

Oh! You who mourn and seek! Where are the gopi girls gone now?

Oh! You who mourn and seek! Where are the forest groves gone now?

Oh! You who mourn and seek! Listen! In the still evening air,

From a waste of houses, the song of Hari is coming now!

From a broken wing in the air its note is carried forth careening hideously,

From a power even stronger than the cordon of Radha's love it falls,

This sweetest of all strains, the name of Hari! Assuring the forest folk;

It clamours for attention rising, even as it plummets to the earth,

Oh! You who mourn and seek! Listen to the song of Hari in the evening air,

Oh! You who mourn and seek! Listen to the forest folk who are dying!



A Tribute to Maharawal Laxman Singh Ji as Conservationist

By

Colonel Guman Singh (Retd.), Banera

In medieval age Kings and Maharajas maintained sanctuaries and game reserves in their territories. They fostered wild animals of all kinds, from deers to leopards and tigers in those game reserves. They enforced strict laws for their shooting, which they themselves observed. They shot the deer or tiger only when their number increased beyond the carrying capacity of the game reserve and thus struck a right balance in prey and predators. This practice could well be compared with the modern day culling system. It was a sound method of conservation.

– Editor

In passing away of Maharawal Laxamn Singh Ji of Dungarpur our country has lost a great shikari and a true conservationist, the like of which would be hard to find. The former Dungarpur state, then containing some of the best jungles of Rajasthan, gave the Maharawal Saheb the opportunity to be initiated into shikar at a tender age.

Shikar, earlier called “akhet” was the martial sport of the kshatriyas or Rajputs and boys were initiated into it at a very early age, as also horse riding, so that they developed their spirit of adventure and became good warriors. Even the Rajput girls, where possible, were taught shooting and horse riding to develop their martial spirits.

Although Maharawal Saheb was class fellow of my elder brother R.K. Man Singh Ji at the Mayo College, I first met him in his palace in 1946, when he kindly entertained my ‘barat’ for lunch and later attended the wedding reception. I was stuck by his fine princely bearing and pleasant refined manners.

The next afternoon Maharawal Saheb kindly took us around his shikar reserve which was adjacent to his palace and occupied an area of few square miles only. As our vehicle left the palace gate we immediately saw herds of cheetal and sambhar. They were in hundreds and we could not believe our

eyes. I had since seen bigger cheetal herds at the Kanha National Park in M.P., but I had yet to see such concentration of sambhar anywhere in such a small area. I had visited quite a few national parks and sanctuaries but never saw such heavy concentration of wildlife especially sambhar. This particular animal is shy and nocturnal and hence difficult to encounter. During an hour's drive we saw hundreds of wild animals including sambhar, cheetal, four-horned antelope, blue bull, wild boar and even an odd black buck. The latter was confined to open areas of reserve. A tiger was also in this reserve but we did not see him.

Maharawal Saheb was very strict in preserving game animals and birds and had excellent arrangement throughout his state to preserve them for his and his friend's sport. No one could dare shoot without his permission in the reserves and it was considered a sin to shoot a female or a young deer or antelope and those who did so were punished. He himself was very particular in selecting stags and bucks that had maximum growth in antlers and horns respectively. By this selective shooting he preserved his game animals and permitted them to multiply and attain maximum growth. A look at his shikar trophies in his palace bear testimony to this statement, since some of them are exceptional big heads.

His state also had quite a big number of tigers and panthers and there again he did selective shooting. He would only go for the biggest tiger or panther and left the females and the young ones to breed and grow. A new method of shooting tigers, over a kill, from behind a screen, was also introduced by him. Instead of a machan or a tower, a screen of grass and leaves was erected on the ground overlooking a place where a tiger after making a kill would stay on, having sufficient water and cover for his needs. Tiger, being a royal game, no one was permitted to shoot without his permission. In fact it was reserved only for him, his family and his guests. He was fine shot both with rifle and gun and as a true sportsman never shot game birds on the ground.

Maharawal Shaeb even made three trips to East Africa to shoot elephant, rhino and lion besides numerous antelopes found in that country. His trophies were beautifully mounted by the famous taxidermists, Van Ingen & Van Ingen

of Mysore and are artistically placed in a large hall of his palace, which was called the African Trophy Room. Similarly he had arranged his Indian Shikar trophies also, but his African Room was the best I have seen so far. His magnificent trophies show how selective he was in shooting them. He also strictly observed the close and open seasons for shooting game animals and birds and insisted on others to do the same. This is how a true shikari and sportsman should be. Although in present times shikar is banned in India, yet the game animals have become scarce, thanks to the lack of proper protection and destruction of habitat. Poachers have their fields day who do not spare even females and young.

It is said that a true shikari or a sportsman is one who, despite doing selective shooting, has the interest of the game animals and birds, he shoots, at heart. It sounds paradoxical but it is true, since he would always like to see them grow and multiply, so that he can enjoy his sport for ever. Maharawal Saheb was true to this type, a keen shikari and sportsman in every sense of the word.

A few years after the merger of Dungarpur state to Rajasthan, I visited the small preserve area mentioned above and was shocked to see that its glory had vanished. Poachers ruthlessly killed all animals in it and its jungle was also cut down. I regret to say that I saw nothing except barren hills and plains. This, unfortunately, had been the fate of almost all the game preserves and jungles that were so carefully maintained by the former Maharajas, Rajas and others.

Whenever I visited Dungarpur I called on the Maharawal Saheb and we had some good talks on Shikar and wildlife conservation in our country. He also told me about his shikar experiences particularly of Africa. He was sad that no one was seriously interested in wildlife preservation and both the animals and their habitats had been ruthlessly destroyed. This subject only received lip service and the legislations passed were never enforced effectively by our Government.

The best tribute we can pay to late Maharawal Laxman Singh Ji is to emulate him as a true sportsman and a wildlife conservationist.



Know Your Wildlife

The Clouded Leopard

The clouded leopard (*Neofelis nebulosa*) is a cousin of the leopard (*Panthera pardus*). It is a forest dwelling animal and is rarely sighted in the open. It lives on trees and breeds in the hollows of tree trunks and branches.

The clouded leopard is found in the forests of Nepal, Skikim, Bhutan, Assam, Arunachal Pradesh, Meghalaya and North Bengal. It inhabits a wide range of terrain, from plains to an elevation of 2000 metres.

Clouded leopard is a fascinating animal. It has long curved body, short limbs which make the belly almost touch the ground. Its coat is short, greyish and brownish to yellowish in colour. It is marked with distinct black stripes, spots and irregular patches. The face is marked with distinct stripes. Throat and belly have black blotches, underparts are white. The clouded pattern of blotches gives it the name it so richly deserves. The ears are rounded and tail is bushy and is ringed with black markings. Tail tip is black. Cubs are darker in shade with black and yellow spots. The size of clouded leopard is generally under six feet. An adult clouded leopard is 60-110 cm long and 80 cm high at its shoulders. Tail is 60-90 cm long. Adult weighs 15-20 kg.

Clouded leopard is shy, but becomes active during dusk. It attacks the prey from the trees. It generally preys upon smaller deer, sheep and goats.

Clouded leopard is a solitary animal except during mating season. The size of the litter is 2-4, usually two cubs are born. The young ones are born blind. They open eyes after 10-12 days. Young cubs become independent in 9-10 months.

Habitat destruction by *jhum* cultivation and deforestation has posed a serious threat to this animal. Its survival seems doubtful, as it does not easily breed in zoos. It is protected under Schedule I of Wildlife (Protection) Act of 1972, which prohibits its killing or capturing dead or alive. It is also listed in Appendix I of CITES.



The Clouded Leopard



The SANGAI

The Sangai

The Sangai is the State Animal of the State of Manipur in North East India. The Sangai is known to the outside world by its common name, the Manipur Brow-antlered Deer. Its scientific name is *Cervus eldi eldi* Mclelland, 1842. The last of its safe refuge in the wild is the 40.5 sq. km. Keibul Lamjao National Park (core zone area of 15 sq. km), located approximately 55 km south of Imphal, the capital of Manipur State.

In 1974 only 14 Sangai deer were reported in the wild at Keibul Lamjao. In 1999, survey conducted by the wildlife wing of State Forest Department reported 149 Sangai in the national park. The park is presently threatened by hydrological and ecological changes in the Loktak lake area. The Sangai also faces threat from poachers, and unnatural death in its degenerated habitat.

The Sangai is identified as one of the most threatened animals and the last of its species in the whole world. The deer is endemic, rare and endangered mammal species. It finds a place in the IUCN's (International Union for the Conservation of Nature and Natural Resources; Headquarters: Switzerland) Red Data Book of endangered species in the world. The Sangai is classified as **Schedule I** animal (highly endangered) under the Wildlife (Protection) Act 1972 and the Manipur Wildlife (Protection) Rules, 1974. Illegal slaying of the Sangai amounts to a penalty of Rs. 25,000 fine or minimum one year imprisonment, or both.

The legal status of the Sangai under the CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora, 1975) is **Appendix I** (species threatened with extinction). International trade of the Sangai in any form is not permitted under the CITES regulations. Unfortunately, there is no specific conservation programme like the Project Tiger for the conservation of the Sangai.



APPEAL

Biodiversity: the variety of living things on earth— the different plants, animals and micro organisms,

The National Biodiversity Strategy and Action Plan Why must you contribute to its cause?

Because even as you read this, myriad species of wild plants and animals, livestock breeds, and crop varieties are dying out;

Because indiscriminate exploitation of natural resources leads to severe shortages of water, fodder and fuel; and disasters such as floods, landslides and famines;

Because at the rate at which the earth is being plundered, there won't be much left to sustain human existence for long.

Because you have the power to make a difference

The Government of India has commissioned the development of a National Biodiversity Strategy and Action Plan (NBSAP). This process, co-ordinated by NGOs and official agencies, aims to produce a series of action plans at local, state, and national levels with inputs from thousands of people and groups all over the country.

If you have information on biodiversity, if you have ideas for workshops, public hearings, if you would like to develop a local level action plan, or in any other way to contribute to the NBSAP process, please contact us now.

Contact Address:

Ashish Kothari,

(Coordinator, NBSAP Technical and Policy Core Group),
Kalpavriksh, Pune.

C/o Dr. Vibha Ahuja, Member Secretary NBSAP TPCG,
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**National Biodiversity
Strategy and Action Plan**

Tel: 91-11-6415314, 6415385;

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Biodiversity— Your LIFE depends on it

OBITUARY

With profound grief we inform the sad demise on 2-9-2001 of Dr. Narendra Kumar Jain, Chief Patron of the Wildlife Preservation Society of India. Dr. N.K. Jain was a Freedom Fighter, a social worker, an industrialist and above all a conservationist. Due to sheer perseverance and foresightedness Dr. Jain built an industrial empire in and outside Dehra Dun. He was associated with a number of organizations and was a life member and later on a patron of the Wildlife Preservation Society of India. He used to take keen interest in the affairs of the society and in recognition of his services to the cause of wildlife and nature preservation he was unanimously elected Chief Patron of the Society, after the death of Late Rajmata of Nabha, in the general meeting of the Society, held on 31-7-99.

Dr. Jain will be remembered for a long time to come for his services to the society. May his soul rest in eternal peace.

Wildlife Preservation Society of India

1. The aims and objects of the Society are as follows :-

- (a) To promote interest and impart knowledge regarding the preservation and conservation of all forms of wildlife, particularly among the youth of the country.
- (b) To cooperate with the Govt. of India and State Governments and with others Societies and Institutions having similar aims and objects in working for the interests of wildlife.
- (c) To assist in enforcing and actively supporting the Forests Acts, Wild Birds and animals Protections Acts and Rules etc. of State Governments and the Indian Arms Act and Rules in so far as they pertain to wildlife and to bring to the notice of the authorities any infringement of the same and to assist in the detention and prosecution of offenders in respect of such laws.
- (d) To advise and help the Govt. and wildlife administrators in the formation, maintenance and protection of Sanctuaries and National Parks, preservation of wildlife in general and endangered species of India in particular and in the introduction of exotic species into the country, rehabilitation of endangered species etc. and in the formulation and amendments of rules and acts, so as to conserve and increase wildlife stocks.
- (e) To raise funds for carrying out the above aims and objects and to found and maintain museums, reading rooms and libraries of natural history in order to disseminate knowledge regarding wildlife.
- (f) To carry out publicity and propaganda for the preservation of wildlife in India by means of monographs, journals, films, filmstrips and other feasible methods.
- (g) To assist members of the Society in obtaining facilities for viewing and photographing wildlife in India.
- (h) To conduct research into the problem of Wildlife management in India, and in pursuance of this, to initiate, encourage and, where possible assist in the projects for the study of threatened species and related objects and to provide reference and research facilities for such work.
- (i) To carry on such other activities which will serve the above subjects.

2. What membership of Wildlife Preservation Society of India will entitle you to?

- (1) You will become an active member of the growing group of Wildlife enthusiasts, who enjoy working for and spreading the knowledge of how to conserve India's heritage of wildlife for posterity.
- (2) You will be entitled to the full use of the library of the Wildlife Preservation Society and of its reading room.
- (3) You will receive a membership certificate.
- (4) You will receive a personal Identification and Membership Card.
- (5) You will be entitled to buy all publications of the Society at a concessional rate.
- (6) You will be entitled to buy at concessional rates the Societies Greeting Cards, Calendars, Tie, Lapel badges and the Balance of Nature Game (specially Published in colour for its educative and recreational values).
- (7) You will be supplied "Cheetal", the quarterly journal of the society free.

3. For membership particulars write to Honorary Secretary, Wildlife Preservation Society of India, 7 Astley Hall, Dehra Dun.

A TRIBUTE to Late Rajmata Urmila Devi of Nabha

With profound joy we inform our members, subscribers and readers that late Rajmata Urmila Devi of Nabha, wife of Late Pratap Singh Ji Malvendra of Nabha has donated, through her will, a sum of Rs. 250,000/- to the Wildlife Preservation Society of India. Late Maharaja Nabha, husband of Rajmata Urmila Devi was founder President and late Rajmata was a Patron of the Society. After the death of late Maharaja Pratap Singh ji the Rajmata Continued to take keen interest in the affairs of the Society and in recognition of her services to the Society, she was unanimously elected Chief Patron in the General Meeting of the Society held on 25-11-95. She held this post with dignity till she breathed her last on 5-8-1997.

Due to sheer benevolence she donated Rs. 250000/- to the Society through her will. The Society expresses deep gratitude to late Rajmata Urmila Devi. May her tribe increase.

Wildlife Preservation Society of India

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Hon'ble Minister of Environment & Forests, Govt. of India

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